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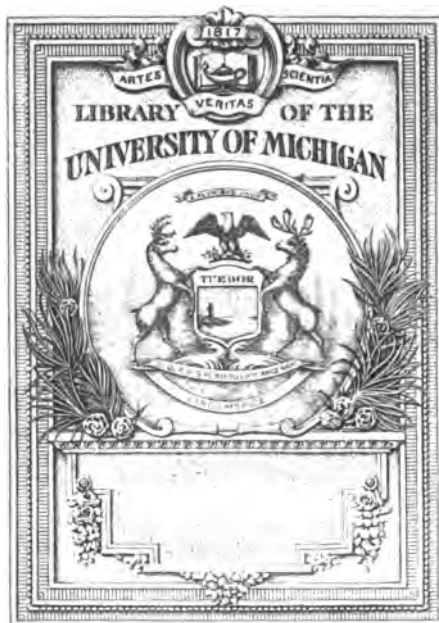
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**THE
AMERICAN MUSEUM OF
NATURAL HISTORY**

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THE
AMERICAN MUSEUM OF
NATURAL HISTORY

ITS ORIGIN, ITS HISTORY
THE GROWTH OF ITS DEPARTMENTS

TO DECEMBER 31, 1909

BY

HENRY FAIRFIELD OSBORN
PRESIDENT

WRITTEN WITH THE COOPERATION OF
MEMBERS OF THE ADMINISTRATIVE AND SCIENTIFIC STAFFS

SECOND EDITION

1911

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I

ORIGIN OF THE MUSEUM

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FOREWORD

THIS outline of the History of the Museum has been prepared for the benefit of the Trustees, Members and Scientific Staff. The present edition is abbreviated from a full report presented to the Trustees February 14, 1910, and constituting the Trustees' Edition.

The first manuscript History of the Museum was that written at the request of the late President Morris K. Jesup by Mr. L. P. Gratacap. It is still unpublished, but has yielded very valuable information.

The materials for the present History have been assembled chiefly by Assistant Secretary George H. Sherwood and the Curators of the various Departments, from the Minutes of the Meetings of Trustees and Executive Committee, the Annual Reports of the Presidents, and from the records of the several Departments. The text of the historical sections has been prepared largely under the direction of Mr. Sherwood by Miss Elsé Grant Symonds. The editing and proof-reading of the manuscript have been done chiefly by Curator Edmund Otis Hovey.

One of the chief objects of the History is to record our grateful acknowledgments to the many scientific men and to the many patrons of science as well as to the three past Presidents and their supporting Trustees, who have guided the affairs of this great institution.

Doubtless there still remain many omissions despite the best efforts at accuracy. The names and special services of some of our many friends may have been unintentionally passed by or unrecorded. It is hoped to remedy such omissions as are discovered in a third and fuller edition of this History. Suggestions and corrections should therefore be addressed to the Assistant Secretary at the Museum.

HENRY FAIRFIELD OSBORN,
President.

July 1, 1911.

I. ORIGIN OF THE MUSEUM

LOUIS AGASSIZ, the great Swiss naturalist, came to this country in 1848 on a call to Harvard College, and his influence was immediate and far-reaching. One of his best gifts was that of inspiring all who heard him with a love of natural history. Among his many pupils at Cambridge was Albert S. Bickmore, who studied under him for four years (1861-65) and who caught his enthusiasm. Coming to New York in 1865 to arrange for an exploring expedition into the Far East, funds for which had been provided by New England friends, Mr. Bickmore made the acquaintance of Mr. William Earl Dodge, 2d, and broached to him his plan for a great museum of natural history in the metropolis. Such a museum had been projected by Agassiz for Harvard College.

After three years (1865-67) spent in the Dutch East Indies, China, Japan, and Siberia, Mr. Bickmore, on his way home, stopped in London where he showed Sir Richard Owen, Director of the British Museum of Natural History, his plans for a natural history museum in New York, which had been maturing during his long journey in the East. Owen expressed general approval of the plan, thereby greatly encouraging the young traveler.

This general conception of a very large and comprehensive museum, as developed through the action of the Trustees and the original architects, Calvert Vaux and J. Wrey Moulder, together with the fortunate selection of the site of Manhattan Square, resulted in the bold projection of the great American Museum building, (one-third of which is now completed.)

On his return from London, Mr. Bickmore again called upon Mr. Dodge, who at that time was too much occupied with other matters to give his personal attention to the new project, and therefore sent the young man with a message to Mr. Theodore Roosevelt, Sr., in whom

HISTORY OF THE MUSEUM

the museum project found a strong friend and energetic supporter. Through Mr. Roosevelt and through Messrs. William A. Haines, Benjamin H. Field, and Robert Colgate, a remarkable group of men was brought together which ultimately resulted in the establishment of the first Board of Trustees. Mr. William A. Haines was both a merchant and a student; he had brought together a large collection of shells; he had in conversation and in correspondence emphasized his hope of seeing a museum of natural history erected in New York, and his talent as an organizer led to his taking a prominent part in the movement and being elected chairman of the Executive Committee.

The Founders, or original Board, included the following:

John David Wolfe,	William T. Blodgett,
Robert L. Stuart,	Andrew H. Green,
Robert Colgate,	Morris K. Jesup,
Benjamin H. Field,	D. Jackson Steward,
Richard M. Blatchford,	J. Pierpont Morgan,
Adrian Iselin,	Moses H. Grinnell,
Benjamin B. Sherman,	A. G. Phelps Dodge,
William A. Haines,	Charles A. Dana,
Theodore Roosevelt,	Joseph H. Choate,
Henry G. Stebbins,	Henry Parish,
Howard Potter.	

The steps in the organization of the Museum were as follows: The first letter to the Commissioners of Central Park, dated December 30, 1868, with nineteen signers, received favorable response from Mr. Andrew H. Green, as Comptroller of Central Park, dated January 13, 1869. The signers of the letter then took immediate steps to raise a fund for the purchase of important collections which were then offered for sale.

The Special Committee appointed to perfect the organization consisted of

William A. Haines,	Howard Potter,
Theodore Roosevelt.	

ORIGIN OF THE MUSEUM

This Committee nominated the Trustees of the new Museum. Mr. John D. Wolfe was elected Chairman, and Mr. Howard Potter, Treasurer *pro tem*. The next meeting of the Trustees was held at the residence of Mr. Haines, and Theodore Roosevelt was made Secretary. A plan for subscriptions was then considered, and this eventful meeting, the results of which actually installed the first great museum devoted to natural science in New York City, adjourned.

The conception of the Museum, its original purposes and its future may be gathered from passages in the First Annual Report of President Wolfe: "That, recognizing the necessity of such a Museum as a means of education and recreation, and desiring its establishment upon a scale commensurate with the wealth and importance of our great city . . . we have, if properly supported and aided with funds by our fellow citizens, a guarantee of a prosperous future in the formation of a Museum of Natural History that will be second to none, and which, while affording amusement and instruction to the public, will be the means of teaching our youth to appreciate the wonderful works of the Creator."

The original officers were the following:

President

JOHN DAVID WOLFE

Vice-Presidents

ROBERT L. STUART

WILLIAM A. HAINES

Secretary

A. G. PHELPS DODGE

Treasurer

HOWARD POTTER

Chairman of the Executive Committee

WILLIAM A. HAINES

The original letter of application was sent to the Commissioners of Central Park on December 30, 1868. The Commissioners accepted on January 13, 1869, the responsibility of "the establishment of a

HISTORY OF THE MUSEUM

Museum in the Park that shall become an aid in the Great Educational System of the City, concentrate and develop Scientific efforts in all departments of Natural History, and at the same time be an instructive and acceptable resort for the people of the city, and for the throng of strangers that visit it." Under the presidency of John David Wolfe and the able guidance of William A. Haines, Chairman of the Executive Committee, the Museum was incorporated April 6, 1869. The financial relations between the Trustees and the City were laid down December 23, 1869, and finally became embodied in the law relating to the Department of Parks.

A most fortunate circumstance in the educational history of the City of New York was the discovery and embodiment in the Contract with the City of a new idea in municipal government—namely, the erection of the building and its maintenance by the municipality, and the donation by Trustees and other citizens of all the collections. This idea appeared in all the early correspondence, in the first contract, and was finally and formally expressed in the contract drawn up by Mr. Choate and Mr. Green when the Museum entered the original building on Manhattan Square.

This reciprocal adjustment was stimulating both to public expenditure and to private munificence; it formed the model on which the relations of the American Museum and of the Metropolitan Museum of Art were established, and on which, in later years, the Botanical Garden and the Zoölogical Park were founded. It is by far the wisest and best adjustment which has ever been devised, since it has proved, by experience, to be superior to exclusive municipal or state control, or to private control. The essential features in these agreements are as follows:

"The Trustees of the American Museum to employ their own Curators for the care and arrangement of their collection, and to pay them their salaries, all such persons to be subjected to the regulations of the Park Commissioners.

"The collections already acquired and those which may from time to time be acquired and so deposited, to remain

ORIGIN OF THE MUSEUM

the property of the American Museum of Natural History, to be removed by them immediately after the expiration of six months' previous notice in writing to the Commissioners of the Park, or within six months after receiving a written notice from the Commissioners asking them to withdraw their property from the Park." *

"The Board of Commissioners of the Department of Public Parks in the City of New York is hereby authorized to contract, direct, and to maintain in and upon that portion of the Central Park, formerly known as Manhattan Square, or any other public park, square, or place in said city, a suitable fireproof building . . . for the purpose of establishing and maintaining therein . . . a Museum of Natural History, by the American Museum of Natural History . . . and it shall be the duty of and lawful for the Comptroller of the City of New York to create and issue in the manner in this act provided such additional amounts of a public fund or stock, to be denominated 'The Museums of Art and Natural History Stock,' as shall be necessary to provide the money required for erecting said buildings, for an amount not exceeding the aforesaid limitations."†

* Letter from W. A. Haines to Andrew H. Green, December 23, 1869. The terms were accepted by Mr. Green, January 21, 1870.

† Act of the Legislature of the State of New York, passed April 22, 1876.

II

HISTORY OF THE MUSEUM

UNDER THE ADMINISTRATIONS OF

JOHN DAVID WOLFE
1869-1872

ROBERT L. STUART
1872-1881

MORRIS KETCHUM JESUP
1881-1908

HENRY FAIRFIELD OSBORN
1908-



JOHN DAVID WOLFE

FIRST PRESIDENT

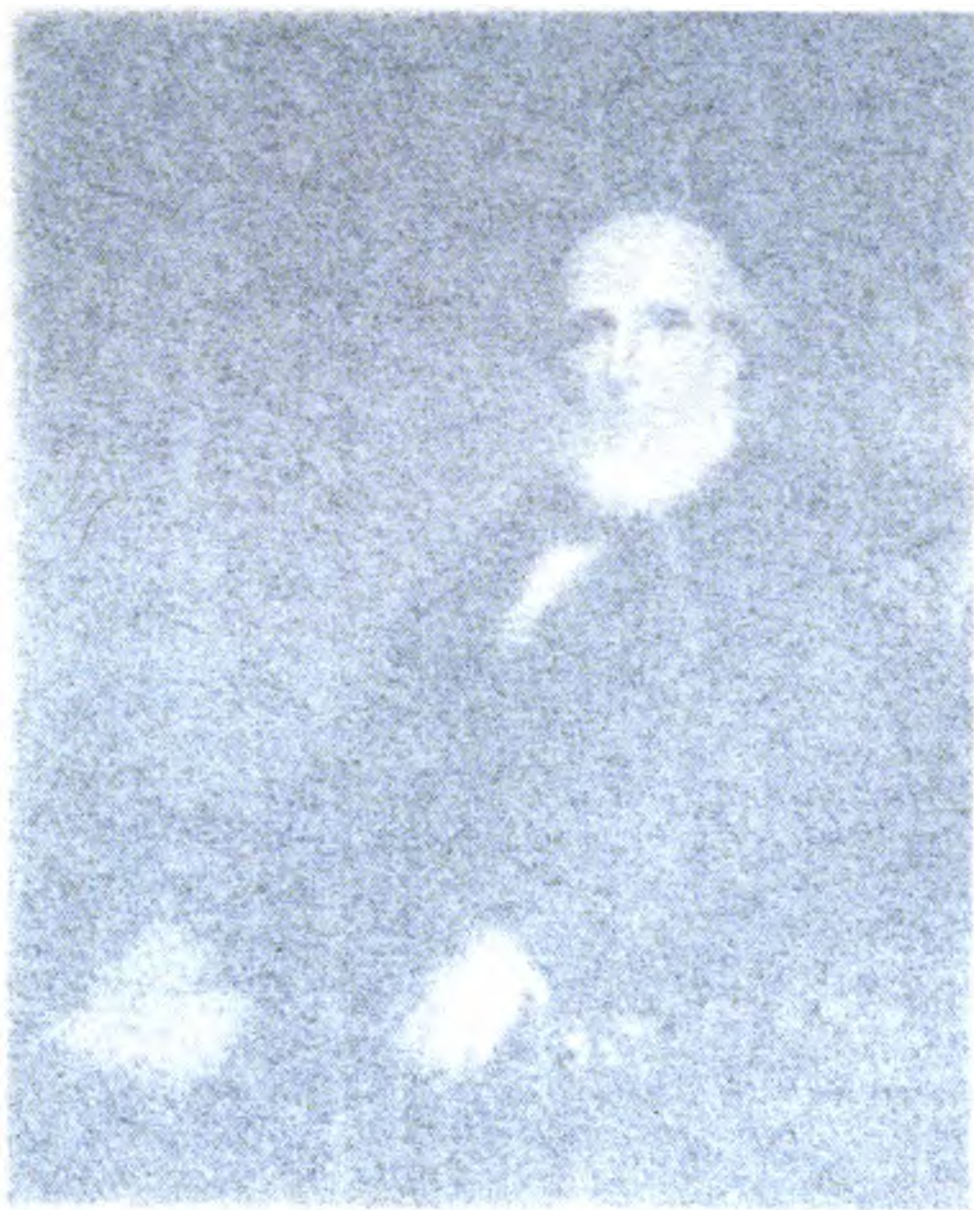
1869-1872

From Museum Portrait by Daniel Huntington

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PRESIDENCY OF
JOHN DAVID WOLFE

1869-1872

THERE was a universal predisposition to assist the new institution, and public administrators as well as individuals welcomed its foundation, indorsed its aims, and promised assistance.

It was almost immediately realized that the Museum, thus tentatively organized, needed a charter, to give it corporate functions and responsibility, and Messrs. Joseph H. Choate, William A. Haines, and Howard Potter were made a committee to prepare a charter, suggest a name and apply to the Legislature for the passage of an act of incorporation.

On February 26 a meeting of the Trustees was held at the residence of the President, and the committee appointed at the previous meeting to prepare a draft of a charter presented their report, which was adopted section by section and as a whole. (The Charter.)

This charter, which first contained the name American Museum of Natural History, was referred back to the committee under instructions to present it to the Legislature.

It was introduced to the Assembly by Mr. Kiernan, to the Senate by Mr. William M. Tweed, read twice, and referred to the Committee on Public Education—reported favorably from that committee, and committed to the Committee of the Whole—and on April 6, 1869, it had passed both houses of the Legislature. It was immediately accepted by the Trustees. This act, significant (by its prompt passage by the Legislature) of general recognition of its utility, and significant as emanating from a representative body qualified to support the claims it created, was hailed with general pleasure.)

HISTORY OF THE MUSEUM

Constitution.

The Trustees at once, on motion of Charles A. Dana, at the same meeting in which the Act of Incorporation was accepted, appointed a committee of three to draft a constitution. This committee was composed of Messrs. Charles A. Dana, Theodore Roosevelt, and Joseph H. Choate.)

The Constitution of The American Museum of Natural History was carefully framed and was adopted May 4, 1869, precisely as originally drafted by Mr. Choate. It was a document embodying fundamentally the aim of the founders of the Museum to restrain and limit all government of the Museum within the body of Trustees. This design appears throughout the document, and its wisdom has been amply illustrated in the whole subsequent history of the institution. The Constitution was a simple and adequate fabric. It was purely regulative, and its provisions have met the requirements of nearly forty years.

Subscriptions.

Meanwhile the financial outlook was unexpectedly promising, and the response to solicitation generous. The personal prestige represented in its Trustees, their own pledges and the quick appreciation of the educational purposes of the Museum, established at once a basis of appeal that was irresistible. By November of the first year (1869) of the Museum's corporate existence \$44,500 had been subscribed.

Collections.

Several large collections had been offered and negotiations were opened for their purchase. The Trustees finally acquired the collection of American birds of the ornithologist, D. G. Elliot, consisting of about 2,500 specimens; the important collections of Prince Maximilian of Neuwied on the Rhine above Bonn, comprising 4,000 mounted birds, 600 mounted animals, and about 2,000 fishes and reptiles mounted and in alcohol, and the principal parts of the Verreaux and Vedray collections—the former embracing 2,800 mounted birds, 220 mounted animals and 4,000 mounted skeletons of mammals, birds, reptiles, and fishes, and the latter, 250 specimens of mounted mammals and birds of Siberia. These four collections formed the nucleus about which the Museum has grown.

THE ARSENAL—THE FIRST HOME OF THE MUSEUM

At first there was no building, no hall or room for the exhibition of the collections, and this urgency caused the President and Trustees first to look to the Cooper Union, that hospitable center for all public efforts in education and culture, and subsequently (December 30, 1868) to the Commissioners of the Central Park, correspondence with whom led later to the occupancy of the old Arsenal building in Central Park.

The Arsenal was an oblong structure of four stories with its corners broken by four polygonal towers, and four more placed midway between them. The second and third stories were surrendered to the Museum. New cases were furnished by the Commissioners, numerous repairs effected, and, through the efforts of Professor Bickmore and Dr. Holder, it was made attractive. In reality, the conjunction of this first position of the Museum with the Park Menagerie, or Zoölogical Gardens, in the midst of which it stood, was a fortunate coincidence. It assisted greatly the Museum's popularity.

With the additions almost daily made to the collections, and the complete absence of space for the accommodation of duplicates, and preparation of specimens, as well as the obvious temporary and dangerous nature of the Arsenal building, the Trustees became more and more impressed with the need of erecting a different and suitable structure. From the outset of this enterprise it was intended eventually to erect a building which in its capacity and architectural features would command attention, and by permitting a proper exhibition of its collections lead to a scientific revival in New York. Messrs. Blodgett, Roosevelt, and Morgan were therefore early (November 14, 1870) appointed "to take in charge and procure such legislation as may be necessary to promote the interests of the Museum."

The moment was propitious. The sister Museum of Art, already in its personnel partly identified with the Museum of Natural History, wished also a better home than a wandering locus in private residences. The movements combined. Their united strength was irresistible. A great petition actually inclosing 40,000 names was prepared, a body

HISTORY OF THE MUSEUM

The Building.

of citizens made up of what was best and most valuable in New York society. The petition begged for an appropriation sufficient to begin the building of an Art and of a Scientific Museum, and the unanimity of the appeal and its extraordinary strength brought almost instant acquiescence to this request.

The Legislature responded to this appeal, and passed an act authorizing the Department of Parks to contract for, erect, and maintain in and upon that portion of the Central Park formerly known as Manhattan Square, or any other public park, square or place in said city, a suitable fireproof building for the purpose of establishing and maintaining therein, under rules and regulations to be prescribed by the said Board from time to time, a museum of natural history to be occupied by the American Museum of Natural History.

The General Design.

Steps were taken to grade Manhattan Square and to prepare it for the erection of the building. It is interesting to note that the original committee, in preparing a report containing preliminary recommendations as a basis for the designs, was instructed to consider both the Metropolitan Museum and the American Museum. The preliminary preparatory stages toward the submission of designs for the new building were entered upon in earnest. Meetings of the Trustees were convened for a discussion of the location of the new building, and inspection trips were taken through the Park to consider this important question in detail. At first there was an evident impression that the site should be near the Menagerie or Zoölogical Gardens, that is, near the Arsenal. The first position offered for the American Museum was the site subsequently allotted to the Museum of Art. A special Committee on Site, composed of Messrs. Haines, Jesup, and Stuart, was finally appointed to confer with the Department of Parks with reference to selecting a site for the new building, either within Central Park, Reservoir Square, or Manhattan Square. Thus the sites of the Metropolitan Museum of Art and of the New York Public Library were both originally considered by the American Museum, and we must regard it as a most fortunate circumstance that both were rejected and that Manhattan Square was finally chosen. This, however,


Discussion as to Site.

JOHN DAVID WOLFE

as described below, was not until after a site within the Park itself was first selected.

The action regarding plans was most broad-minded. It was first The Plans. resolved that Messrs. R. M. Hunt, Russell Sturgis, Jr., and Renwick and Sands be invited to unite in furnishing designs. The united plans were received by the Trustees on May 13, 1872, and again referred to a Committee on Plans composed of Messrs. Haines, Steward, Blodgett, and Roosevelt. At the same time, to insure a full discussion, it was resolved that letters be written to prominent scientific gentlemen asking their views in regard to the scope that should be comprised at this day in a Museum of Natural History for the City of New York, and Mr. D. G. Elliot was requested to communicate with Professor Asa Gray and Professor Richard Owen, asking them to submit a report furnishing a plan and a policy best calculated to promote the success of the Museum.

In the midst of these promising steps toward the founding of a great Museum, President Wolfe died on Friday evening, May 17, 1872, after a long and very honorable career of service to the city of New York. His presidency covered only three years, but this formative period fixed the outlines and assured the future of the Museum. He lived long enough to see the prospect of its future greatness. The Museum owes its foundation in large measure to his aid and wise counsel, and will always count among its best treasures the name and character of its First President.



PRESIDENCY OF
ROBERT L. STUART

1872-1881

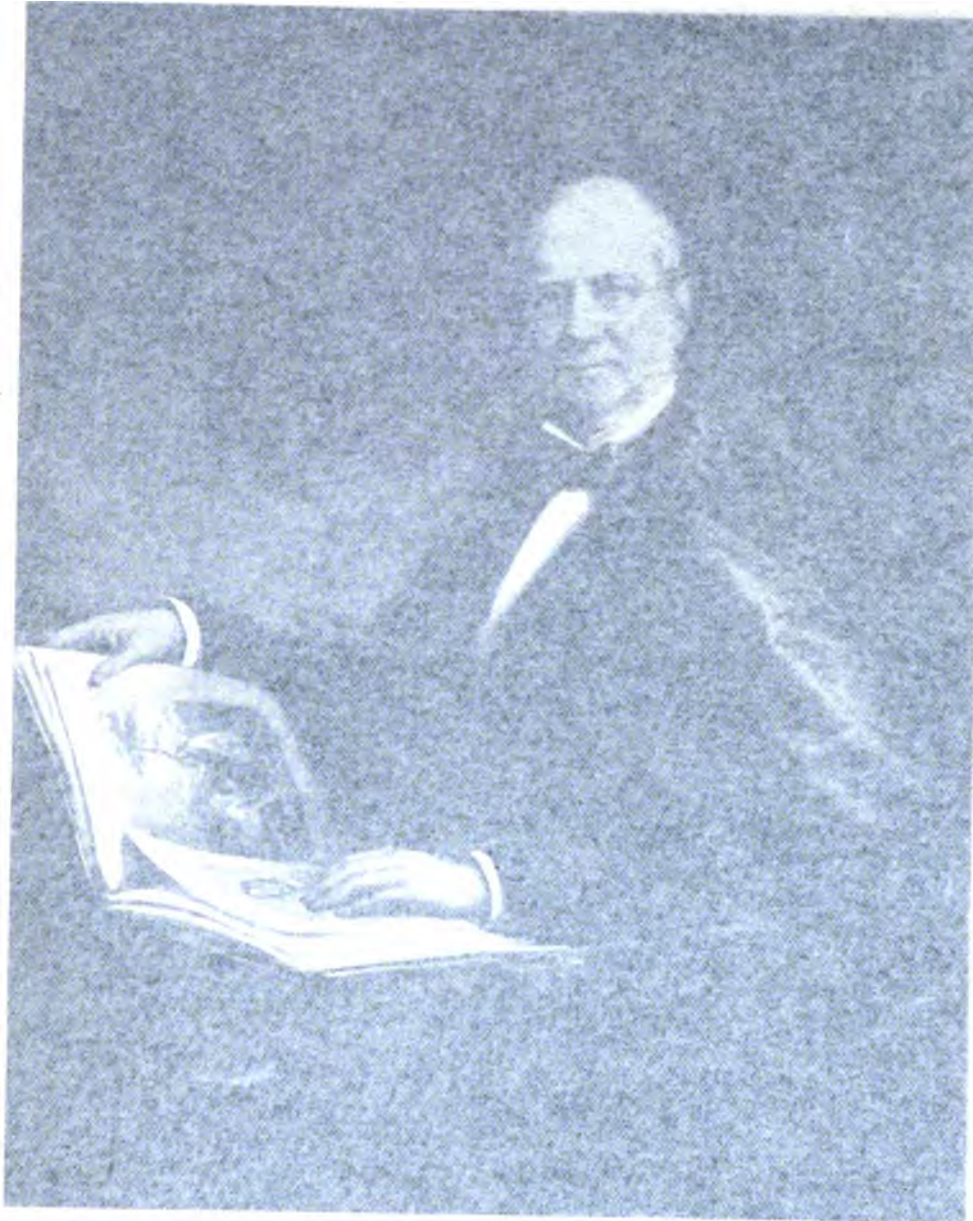
ROBERT L. STUART was unanimously elected to succeed Mr. Wolfe. His identification with the Museum had been close from the start; he had been one of the first contributors and his sympathies were thoroughly enlisted in its success. He was a deeply interested observer of the beauties of nature, and his succession, influenced doubtless by considerations of his age and standing in the community and his financial responsibilities, was natural.

Trustees.

The Board of Trustees at that time included two men of some scientific training, William A. Haines and D. Jackson Steward; the former prominent as a collector, the latter skillful as a critic. A few changes in the personnel of the Board occurred in 1872: five of the Founders, Messrs. Blatchford, Grinnell, Dodge, Dana, and Parish, retired, and to their places succeeded five Trustees who became strong supporters of the Museum, namely, Messrs. Percy R. Pyne, John B. Trevor, James M. Constable, William E. Dodge, 2d, and Joseph W. Drexel.

Site.

The plans of the new building, the purchase of new collections, and the financial interests of the Museum principally engaged the attention of the Trustees. Manhattan Square on the west side of the Park, comprising eighteen acres of very rough land, quite inaccessible from the lower part of the City, was assigned. It had been proposed to make a Zoölogical Garden of this square, and extravagant plans had been prepared. These plans, however, were pronounced immature by the Park Department, and when the Museum proposition arose, somewhat against the deliberate judgment of the Trustees, Manhattan Square was chosen as its site.



ROBERT L. STUART

SECOND PRESIDENT

1872-1881

From Mission Portrait by Daniel Huntington

new building design, and the
 results of our research
 suggest that the
 process of building
 design can be
 improved by
 using the
 results of our
 research.



ROBERT L. STUART

SECOND PRESIDENT

1872-1881

From Museum Portrait by Daniel Huntington



ROBERT L. STUART

Calvert Vaux was selected as the architect. The grand design offered by Mr. Vaux was accepted. It contemplated for the entire edifice a hollow square whose sides were to be formed of four great buildings 700 feet long, ornate in material and detail, and distinguished by large entrances of architectural dignity and strength. The whole structure was intended to cover fifteen acres and fill a space three times larger than the basement area of the British Museum. A building of this great size would embrace the most diverse and apposite kingdoms of nature. The exact sciences might even find here a home; and the technical applications in the arts, room for the exhibition of their numberless adaptations.

Original
Design.

On June 2, 1874, the corner stone of the first section of the Museum was laid with great ceremony. The President of the United States, the Governor of the State, and the Mayor of the City were present. The President was accompanied by three of his Cabinet. Joseph Henry, Secretary of the Smithsonian Institution, added a scientific prestige and delivered a memorable address. Many other prominent men were present. President Stuart's address recited the history of the Museum, paying high tribute to John David Wolfe and to Albert S. Bickmore, "whose services and devotion to the interests of the institution and untiring industry in carrying out the wishes of the Executive Committee, have done much to advance the prosperity of the Museum." Mr. H. G. Stebbins, President of the Department of Parks, spoke for the Park Commissioners in language which now appears singularly prophetic:

Dedication.

"To the stranger who comes here to-day these rugged foundation walls and these rough surroundings are not well calculated to make a pleasant impression; but to us who have watched the rapid growth northward of this City, and who were familiar with the barren and rocky ground upon which the Central Park has been created, it requires but little strain upon the imagination to conceive of the speedy occupation of all these vacant lots by substantial dwellings, and to picture to ourselves the spot upon which we now stand, known as Manhattan Square, as covered by the proposed

HISTORY OF THE MUSEUM

Museum of Natural History, costing ere its final completion, not less than \$6,000,000, and embracing a collection of objects of scientific interest second to none other in the world. . . . What nobler exhibitions could be given of the crowning achievements of this municipality than those which this Museum and its sister institution, the Art Gallery, will afford!"

Equipment.

From June 2, 1874, to December 22, 1877, was occupied in the building and equipping of this section, the City having appropriated \$200,000 for the purpose. The new building was opened to the public on December 22, 1877, and at this time a contract of great importance was concluded between the Trustees of the Museum and the Department of Parks. This contract, or it might be called Charter of the institution, was drawn by Messrs. Andrew H. Green and Joseph H. Choate. It was entitled "Contract with the Department of Public Parks for the Occupation of the New Building." It recited the previous correspondence and legislation relating to the respective rights and obligations of the Museum and of the City, and embodied all the previous provisions in a new and comprehensive document. It was adopted by the Park Commissioners January 30, 1878.

The Museum's collections had now greatly increased in all departments of natural history. A generous donation by Miss Catharine L. Wolfe, in memory of her father, had established the Library, in March, 1874.

Study Collections.

The building up of the study collections, as distinguished from the exhibition collections, had begun in 1873, and from this time on the Museum as a center of study and research became increasingly prominent. The great collection of fossils of the State of New York, brought together by Professor James Hall, was acquired. It had been said by Louis Agassiz that "whoever gets Hall's collection gets the Geological Collection of America." The Trustees acquired it for \$65,000, a sum which put a severe strain upon the finances of the Museum for several years.

ROBERT L. STUART

The question of maintenance was also a serious difficulty. The Maintenance. City had not carried out its original agreement to maintain the institution, and in 1878, Messrs. Potter and Choate were appointed a special committee to prepare a bill to enable a permanent contract to be made between the Museum and the Department of Parks for adequate annual maintenance. In 1879, Messrs. Auchincloss and Bickmore solicited the Legislature for an increase in maintenance to \$20,000. The appropriation obtained for the Museums of Art and Natural History for a common maintenance had been \$40,000. In 1875 they received \$1,390, and in 1876, \$1,538. The growth of the maintenance fund from the beginning to the present time is shown in another part of this report.

The staff of the Museum at the opening of the year 1878, was as Staff. follows:

Professor Albert S. Bickmore, Superintendent.

Dr. J. B. Holder, Assistant.

Professor R. P. Whitfield, Curator of Geology.

The coming of Professor Whitfield added greatly to the scientific strength and prestige of the Museum. Alliances had been formed with the United States National Survey of the 40th parallel, and several distinguished members of its Corps were housed in the Museum, including Clarence King, Raphael Pumpelly, Arnold Hague, and others.

In 1875, the Museum lost one of its Founders, Mr. William T. Blodgett, and in 1878, Mr. Theodore Roosevelt died in the forty-fifth year of his age. In 1880, Mr. William A. Haines died in the fifty-eighth year of his age. The Trustees recorded their great appreciation of the services of these founders and active friends.

Manhattan Square, far beyond the residence district, was gradually becoming approachable. The Park Board developed its walks on the south side. It is of interest to record that the Trustees in 1876 petitioned the Legislature to allow them to establish an Aquarium in connection with the Museum, of sufficient size to enable the public to learn on a somewhat satisfactory scale the form and habits of a

HISTORY OF THE MUSEUM

large class of marine fauna. The estimated cost was \$50,000. In this connection it was stated that the visitors to the Museum at that time exceeded by 2,000 per week the number visiting the British Museum in London. This petition was one of the last acts of Mr. Stuart's administration.

Mr. Stuart resigned the presidency on February 14, 1881. His connection with the Museum had been made memorable by important changes both in the erection of the building and in the equipment of the collections. An increase in maintenance had been secured from the City. It can be said that the Museum had entered in a way upon its present scientific career.



MORRIS KETCHUM JESUP

THIRD PRESIDENT

1881-1908

From Museum Portrait by Eastman Johnson



THIRTI-FOURTH

1954-1955

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MORRIS A.

PRESIDENCY OF
MORRIS KETCHUM JESUP

1881-1908

MR. JESUP was elected to the presidency on February 14, 1881, at a time both promising and critical. The prospects of the Museum were broadening, but the responsibilities were increasing in the same proportion. The institution had outgrown its original organization, and scientific and educational development was needed, as well as more building space. The revenues from the City were very inadequate, and the foundation of an endowment fund was imperative. Little advance had been made in the methods of display of the collections, or in meeting the real educational needs of the public.

Mr. Jesup had been fitted for the office by his connection with the founding of the Museum and by his long service on the Executive, Auditing, Nominating, Legislative, and Building Committees. He was elected Chairman of the Executive Committee on March 29, 1880, and immediately qualified himself for this office by a thorough examination of the work of every department of the Museum: its collections, its scientific officers, its methods of exhibition, and the impression it was making upon visitors. His observations were embodied in a report to President Stuart of April 13, 1880. He especially observed that the grand collection of birds and mammals was not exhibited in attractive form, and that it was desirable to show some of the applications of science both in forestry and geology. As regards income, he pointed out that the only fixed annual income of the Museum was the City's appropriation of \$15,000, and the interest from the \$55,000 of invested funds. Experience.

HISTORY OF THE MUSEUM

The spirit of Mr. Jesup's administration is, perhaps, best expressed in his own language in one of his later reports (1884):

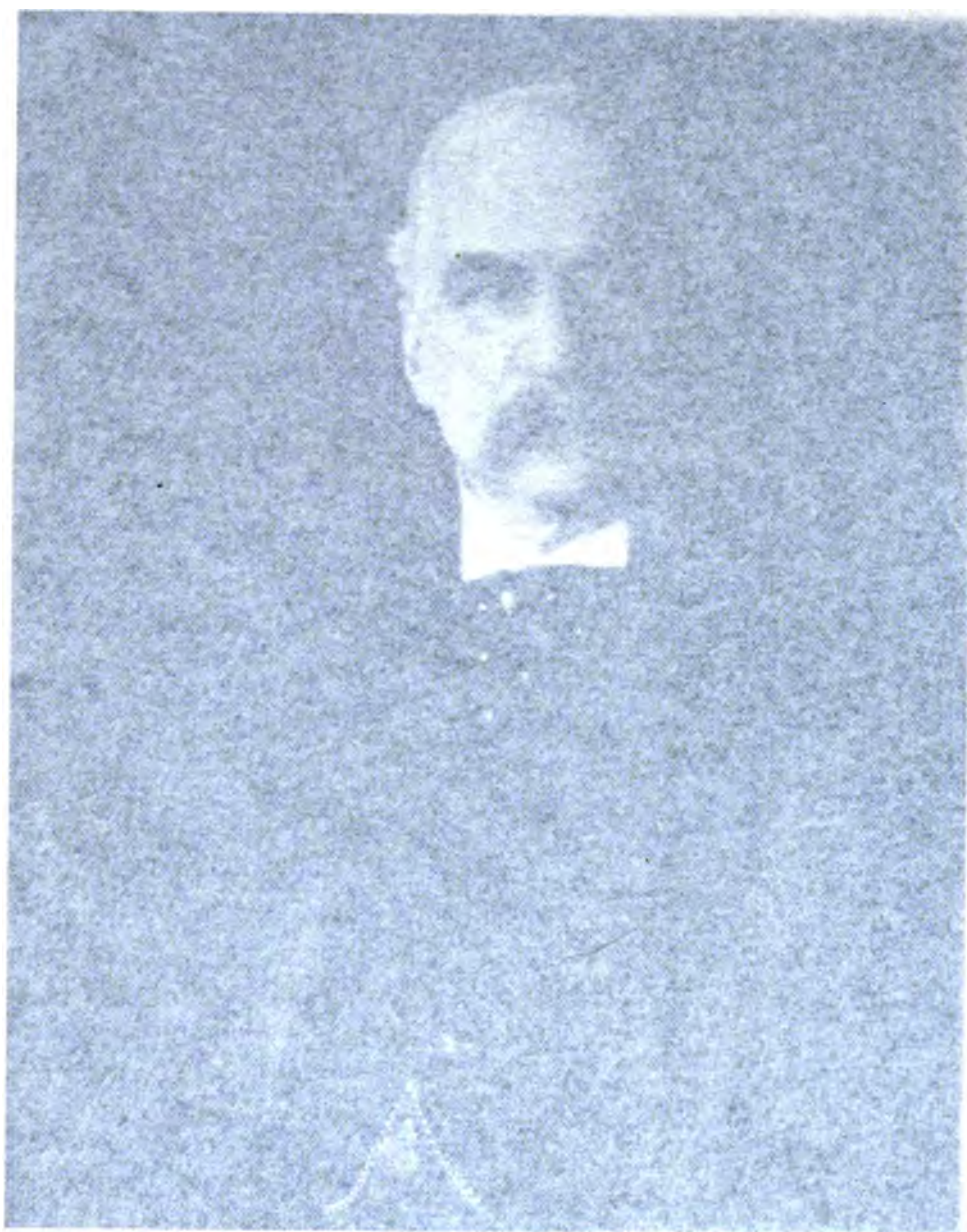
"It would appear to be very desirable to place the Museum on such a permanent basis of maintenance that the annual contributions of the Trustees and Members could be appropriated exclusively to the purchase of objects of science. Valuable collections, which the Museum needs, are continually being offered us for sale, but we are obliged to decline their purchase for want of funds.

"The great Museums of Europe are chiefly sustained by public funds, through the force of an enlightened public sentiment both as to their educational and economic value.

"The value of what you have already accumulated in your halls rises to a large figure commercially, but it is a difficult task to estimate the money value of what belongs to science and scientific institutions. To their value must be added their ameliorating power, their educational force, and the scope they afford the higher faculties of man to apprehend the wonderful phenomena of Nature, and to master and utilize her great forces.

"To the multitude shut up in stone walls, to whom are denied an acquaintance with the beauty of natural objects, or the study of nature in its usual aspects and conditions, the advantage of your Museum is, that it affords opportunity; and out of a great number who look on vaguely and experience only the healthful excitement of a natural curiosity, one here and there may be found endowed with special aptitude and tastes. Perhaps some child of genius, whose susceptibilities and faculties once aroused and quickened, will repay in the field of discovery and science, through the force of some new law in its manifold applications, all your expenditure a hundredfold.

"Commercial values and purely scientific values meet often on common ground; but their essential life belongs to opposite poles. To some it appears necessary to vindicate the employment of large amounts of public money in such an institution as that which you control from the charge of extravagance; their ideas of value appear to be limited to



J. PIERPONT MORGAN
A FOUNDER AND PRESIDENT

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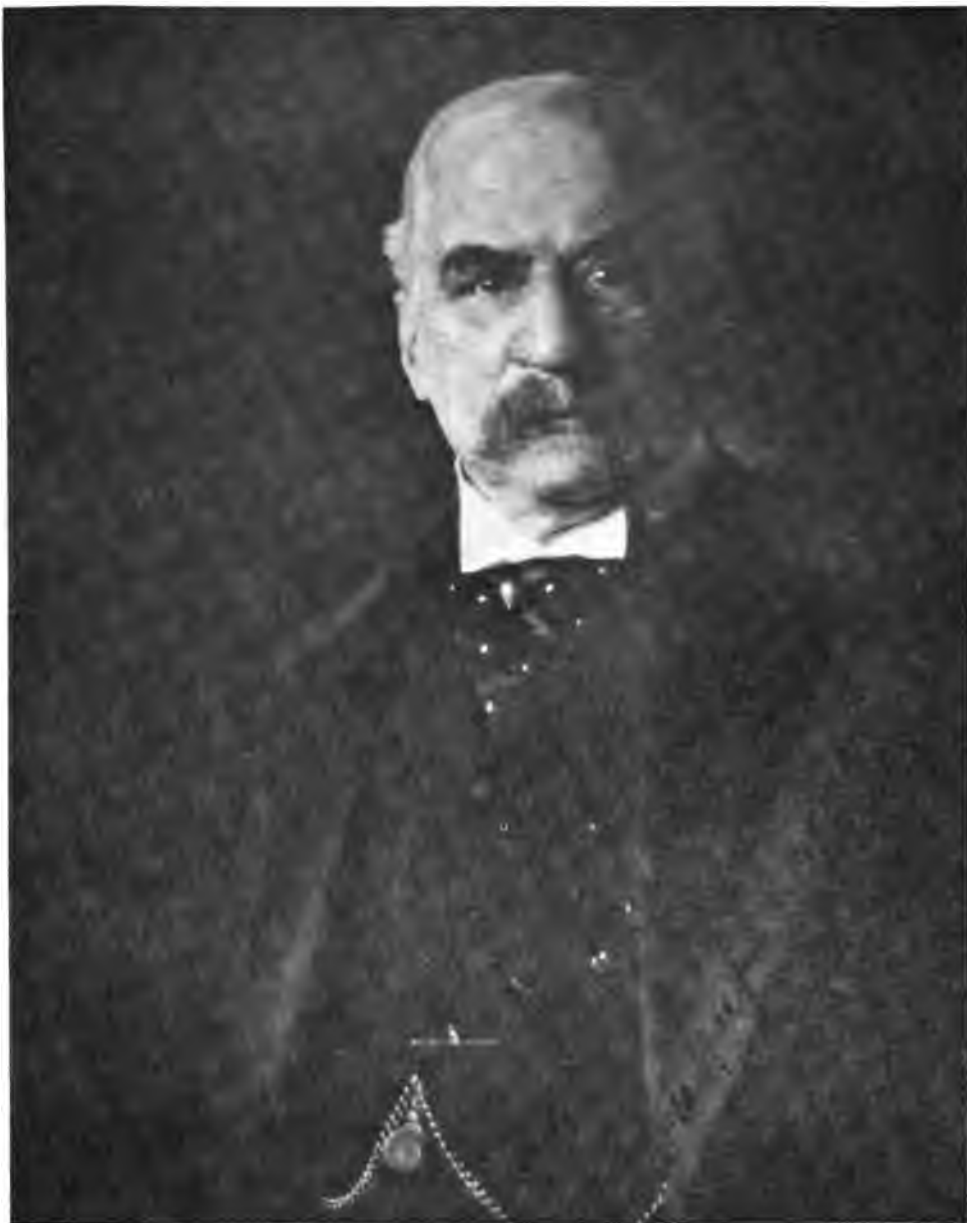
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J. PIERPONT MORGAN
A FOUNDER AND TRUSTEE



MORRIS KETCHUM JESUP

that which is exchangeable in the current coin of the market; but the highest results of character and life offer something which cannot be weighed in the balances of the merchant, be he ever so wise in his generation."

This remarkable series of sentences contains the secret of Mr. Jesup's administration which crowned it with success: his sympathy with the ideals of science, his dominant desire that they should be brought within the comprehension of all classes of people, his firm conviction that truth values are higher than money values, his love of the beautiful. It does not, of course, indicate the other qualities of character which enabled him to carry these ideals into effect, namely, his business instinct, his incessant energy of mind, his excellent judgment, his liberality.

The Board of Trustees at the opening of his administration was Trustees. constituted as follows:

| | |
|---------------------|-----------------------|
| Morris K. Jesup, | James M. Constable, |
| Robert L. Stuart, | William E. Dodge, 2d, |
| Robert Colgate, | Joseph W. Drexel, |
| Benjamin H. Field, | Andrew H. Green, |
| Adrian Iselin, | Frederick W. Stevens, |
| J. Pierpont Morgan, | Abram S. Hewitt, |
| D. Jackson Steward, | Charles Lanier, |
| Joseph H. Choate, | Hugh Auchincloss, |
| Percy R. Pyne, | Oliver Harriman, |
| John B. Trevor, | Cornelius Vanderbilt. |

Many of these Trustees contributed largely both of their time and of their means to the support of the administration.)

Among Mr. Jesup's first acts was the establishment of the Department of Woods and Forestry, under the direction of Professor Charles S. Sargent, of Cambridge, the leading authority on this subject. The opportunity of making the collection arose in connection with the preparation of the Tenth Census of the United States, which embodied Woods. the plan of a report upon the wood resources of this country. Parties

HISTORY OF THE MUSEUM

were sent to all parts of the United States to gather the woods, and the services of Mrs. Sargent were engaged to add the element of beauty to the collection through her paintings of the leaves, flowers, and fruits.

Stones.

At the same time the collection of Building Stones forecast the ultimate development of an economic department which should embrace the ores and industrial products of the earth, and give also sections of mines and the products and systems of metallurgy. After thirty years this project is in the way of being put into execution.

Bulletins.

A rapid review of the chief steps in this administration will, perhaps, give the best idea of Mr. Jesup's originality and of his high ideals for the scientific future of the Museum. The year preceding his appointment, popular lectures in natural history had been instituted by Professor Bickmore. In 1881 came the issue of the first number of the Scientific Bulletins. In 1884 Professor Joel A. Allen, a distinguished zoölogist and pupil of Agassiz, was appointed as head of the Department of Zoölogy. To systematize the free lecture courses the Department of Public Instruction was organized under Professor Bickmore.

Sunday Opening.

In 1885 began the agitation for the Sunday opening of the public museums. This was a step regarded by many as hostile to religion, and led to the withdrawal of certain financial support. Mr. Jesup was at first opposed to Sunday opening because of his religious convictions, but his breadth of view is shown by the fact that, when the resolution in favor of Sunday opening was finally adopted by the Board of Trustees, he devoted his energies to making the movement a success. This change took effect in August, 1892, with the result that more visitors, especially among the laboring class, were attracted than ever before.

Taxidermy.

The first step toward the artistic display of the collections of zoölogy was taken in the engagement of Mrs. Mogridge, an English lady, from the British Museum, who introduced the first bird groups and accessories. This opened the way for the perfected series of Habitat groups in which the American Museum now leads the world.

Exploration.

A new policy of exploration in the field was instituted in 1888 by an expedition for the fast-vanishing bison, supported by Messrs. Jesup



JOHN P. H. C. 1911
A. D. 1911



JOSEPH H. CHOATE
A FOUNDER AND TRUSTEE



MORRIS KETCHUM JESUP

and Constable. This was the first step toward an exploring policy which has now developed (as the history of the various departments shows in subsequent pages of this report) into the sending of expeditions to all regions of the world.

In 1888 the economic importance of insect life was emphasized in the appointment of Mr. Beutenmüller as Curator of Entomology and in the beginning of a collection of economic entomology showing the relations of insect life to forestry. The naturalistic methods introduced in the bird and mammal department were followed here with equal success.

In 1891 Professor Henry Fairfield Osborn was called from Princeton as Curator of Mammalian Palæontology, and the Museum entered on a new line of scientific development in the long history of the vertebrate life of the earth, in which it has now attained first rank. Mr. Jesup contributed liberally to the purchase of three great collections and to the dispatching of an expedition to Africa. Vertebrate
Palæontology.

In the mean time the spirit of hospitality to various scientific institutions of the city and country, and of coöperation with other institutions, led to the opening of courses of lectures both by Columbia University and by the Board of Education, in addition to the multiplying courses given in the Museum's Department of Public Instruction. Scientific
Societies.

The year 1895 was noteworthy as marking the first effort to bring Robert E. Peary home from the Arctic regions. In response to an appeal from Mrs. Peary, Mr. Jesup fitted out a relief expedition, and thus began his interest in the work of the explorer, which was continued in successive contributions to Peary's expeditions, finally resulting in the discovery of the Pole. Indirectly the Museum has benefited by becoming the depository of all of Peary's remarkable collections, including several animals new to science. Peary.

The most noteworthy scientific feature of Mr. Jesup's administration was the establishment of the Department of Anthropology on a commanding basis, under the inspiring direction of Professor Frederic W. Putnam, of Cambridge. (The beginning of the Department dates back to the inception of the Museum and includes the acquisition of Anthropology

HISTORY OF THE MUSEUM

many valuable collections which were now rounded into more complete form under the direction of a remarkable group of men, including Messrs. Putnam, Boas, Saville, Bandelier, Lumholtz, Smith, Jochelson, Bogoras, and others. The financial and scientific coöperation of Messrs. Hyde, Loubat, Villard, and others was enlisted, and the Museum sprang into the front rank, both of exploring and of special institutions in the field of archæology and ethnology. British Columbia, the Plains region, the Southwest, Mexico, Colombia, and Peru were visited by special parties and rich collections brought back.

Jesup
North
Pacific
Expedition.

The central feature of this great work was the North Pacific Expedition, which began in 1897 and which bore Mr. Jesup's name. In his annual report of that year, Mr. Jesup says: "In closing my reference to the work of this Department it is proper to add a few words regarding a subject of great interest, not only to the student of Anthropology, but also to persons interested in scientific research in other fields. I refer to the theory that America was originally peopled by migratory tribes from the Asiatic continent. The opportunities favorable for solving this problem are rapidly disappearing, and I would be deeply gratified to learn that some friends of the Museum may feel disposed to contribute means for the prosecution of systematic investigation in the hope of securing the data to demonstrate the truth or falsity of the claims set forth by various prominent men of science. A map of the localities which should be covered by such system of research appears in this report." His interest in this purely scientific problem of the origin of American races, like that in the discovery of the Pole, illustrates Mr. Jesup's enthusiasm for pure scientific investigation and exploration.

During the closing years of Mr. Jesup's administration, he was relieved of much detail and his labors were lightened by the appointment of Professor Hermon C. Bumpus, of Brown University, as Scientific Director of the Museum. The institution of this office had been strongly urged by Professor Osborn, who for some years had been closely associated with the President in the administration of the Museum.

MORRIS KETCHUM JESUP

SUMMARY OF MR. JESUP'S GIFTS TO THE MUSEUM

Gifts.

Collection of North American Woods and Forestry, 1884-1908.
Collection of Building Stones, 1886.
Portraits of Audubon and of von Humboldt.
Anthropological Collection from southern Mexico, 1894.
Materials from the Peary Arctic Expeditions, 1896-1908.
Jesup North Pacific Expedition, 1897-1903.
Publications of the Jesup North Pacific Expedition, 1899-1908.
Anthropological Collection from Colombia and Costa Rica, 1899.
Anthropological Collection from the Plains Indians, 1899.
Cope Collection of North American Fossil Vertebrates, 1902.
Robinson Collection of Prehistoric Copper Implements, 1902.
Anthropological Collection from the Philippine Islands, 1905.
Japanese Reception Room, 1905.
Series of ten marble portraits in the Foyer, 1906.
Egyptian Fayûm Expedition, 1906-1907.
Anthropological Collection from Amazonas, 1907.
Robley Collection of Maori Heads, 1907.

Altogether Mr. Jesup contributed upward of \$450,000 to the Museum, and in his will he left a bequest of \$1,000,000.

The material development of the Museum; the growth of its buildings from one wing to the magnitude shown in the present report; the increase of its maintenance by the City from \$10,000 a year to \$160,000 a year; the increase of its endowment fund from \$55,000 to \$1,047,750; the increase of its annual attendance from 250,000, in 1884, to 537,000 in 1907; the extension of the influence and example of the Museum to every part of the country, were the results of the continuous effort of the President and of the generous coöperation of several of the Trustees.

The conscientious administration of public funds is notably illustrated in the economic construction of the Museum itself. The building, up to the close of Mr. Jesup's administration, cost the City \$4,838,-

HISTORY OF THE MUSEUM

000; owing to the wise expenditure of this fund, a total floor space of 438,859 square feet had been secured, and a total exhibition space of 262,236 square feet.

The natural satisfaction which the President felt in the growth of the Museum is simply expressed at the close of his Report for the year 1905:

"In concluding this my quarter of a century of service as President of the American Museum of Natural History, I cannot refrain from referring to the Report of twenty-five years ago, when the Trustees stated that 'they most respectfully appeal to the generous citizens of New York, to aid in the effort to make our Metropolitan City the center of the highest scientific culture in our land, and to join in adding new collections and new departments to the admirable nucleus which has been already secured.' As your President it has been my constant effort to fulfill the desires, as expressed by the Trustees, which were so clearly formulated at the time of my appointment, and when we view the stately building in Manhattan Square, when we wander through the exhibition halls and study the priceless collections therein displayed, when we realize that thousands of the people of our City are assembling here to listen to prominent educators, that school children are here receiving their first love for nature and their first taste of science, and that the influence of this institution is being felt throughout the civilized world, truly we can say that the appeal of 1881 to the generous citizens of New York has not remained unanswered."

Bequest.

Mr. Jesup's death occurred January 22, 1908. The terms of his bequest set forth his views as to the relations of the public funds and of the private funds in the support of the work of the Museum:

I give and bequeath to The American Museum of Natural History in the City of New York one million dollars (\$1,000,000), to constitute a permanent fund, the principal to be invested and kept invested, and the income to be applied and appropriated to the general purposes of the Museum, other than alterations, additions, repairs or erection of buildings,

MORRIS KETCHUM JESUP

the purchase of land or the payment of salaries, or for labor or for services of any kind, ordinarily considered under the item of maintenance.

I wish to explain that I have bequeathed this sum of one million dollars (\$1,000,000) to The American Museum of Natural History, and that I have made for it the other bequests and provisions contained in my Will because of the fact that I have been identified with the Museum from its Act of Incorporation to the present time. I have been its President since 1881. Since that time I have devoted a great part of my life, my time, my thoughts and my attention to its interests. I believe it to be to-day one of the most effective agencies which exist in The City of New York for furnishing education, innocent amusement and instruction to the people. It can be immensely increased in its usefulness by increasing its powers. The City of New York, under its contract with the Museum, is to provide buildings and to maintain them, but the buildings must be filled with specimens. This means that for the purpose, the necessary amount must come from individual donors. It is in order that the means for this purpose may be helped, as the Museum must grow in additional buildings by the City, and in view of its great possibilities for the future, that I make for the Museum the bequests and provisions contained in my Will, relying upon the Trustees of the Museum to do their share, by looking after the investment of the funds, the use of its income and by carefully watching over, and wisely planning for the best interests of this great institution.

III

**HISTORY OF
THE DEPARTMENTS**

STAFF OF THE MUSEUM

THE MUSEUM HAS AN ADMINISTRATIVE STAFF
AND A SCIENTIFIC STAFF.

ADMINISTRATIVE STAFF

THE original Administrative Staff of the Museum was under the direction of Professor Albert S. Bickmore, who was likewise a member of the Scientific Staff. In 1884, on assuming the head of the Department of Public Instruction, Professor Bickmore resigned his general administrative duties, after a service of fifteen years, and President Jesup gave personal and detailed attention to the administration of the Museum. Under him were Mr. John H. Winser, Secretary and Assistant Treasurer, and Mr. William Wallace, Superintendent of Buildings.

The growth of the Museum was such that in 1899 Mr. Jesup invited Professor Osborn to act as Assistant to the President and to give his attention to general administration. Professor Osborn introduced a number of new methods of systematizing the work of the Museum, especially in the requisition system, in standard systems of casing and of labeling, in stated meetings of the Scientific Staff, in stated meetings of the Publication Committee, as well as other changes in the scientific and administrative departments. He also outlined the present administrative system for the Rules and Regulations of 1902.

The rapid development of the Museum and the expansion of its business affairs, however, pointed to the necessity of selecting an officer to give his entire time to the supervision both of the scientific and administrative work of the Museum. Accordingly, Dr. Hermon C. Bumpus, Professor of Comparative Anatomy at Brown University, a member of the U. S. Fish Commission Staff and one of the trustees of the Marine

HISTORY OF THE MUSEUM

Biological Laboratory at Woods Hole, experienced both in biological research and in administration, was appointed Assistant to the President, and assumed office January 1, 1901. He entered immediately on a most thorough examination into all the affairs of the Museum, both financial and scientific, and introduced a number of changes in administrative methods.

In February, 1902, the Trustees created the office of Director, and unanimously elected Dr. Bumpus thereto. The powers given the Director made him the chief administrative officer of the Museum.

Following the death of Mr. Winsor in 1906, Mr. George H. Sherwood, a graduate of Brown University, was appointed Assistant Secretary and Assistant Treasurer.

SCIENTIFIC STAFF

At the beginning of Mr. Jesup's administration the Scientific Staff consisted of four persons. At the close of Mr. Jesup's administration the Museum building had grown eightfold, namely, from one wing or section including four exhibition floors and one laboratory and research floor, to eight sections, including twenty-nine exhibition halls, five laboratory and research halls, one hall devoted to the administrative offices. The Scientific Staff increased accordingly, and now (1909) is as follows:

| | |
|---------------------------------------|----|
| Scientific Director..... | 1 |
| Curators..... | 12 |
| Associate and Assistant Curators..... | 11 |
| Curators Emeritus..... | 2 |
| Honorary Curators..... | 5 |

There are in addition a number of scientific assistants whose names do not appear in the Annual Report.

The appointment of a Scientific Director gave an impulse to the Museum which was felt in every department, and additional men of university training and distinction as university professors were attracted to the Museum to take charge of various departments. At the

STAFF OF THE MUSEUM

same time the Scientific Staff, through the continued appointment of highly trained men, has enjoyed an increased prestige in this country and abroad, and an appointment has come to be regarded as an honor equal to a collegiate or university professorship.

Several scientific experts who have gratuitously rendered conspicuous service to the Museum in their various departments of research have been appointed Honorary Curators.

GEOLOGY AND FOSSIL INVERTEBRATES

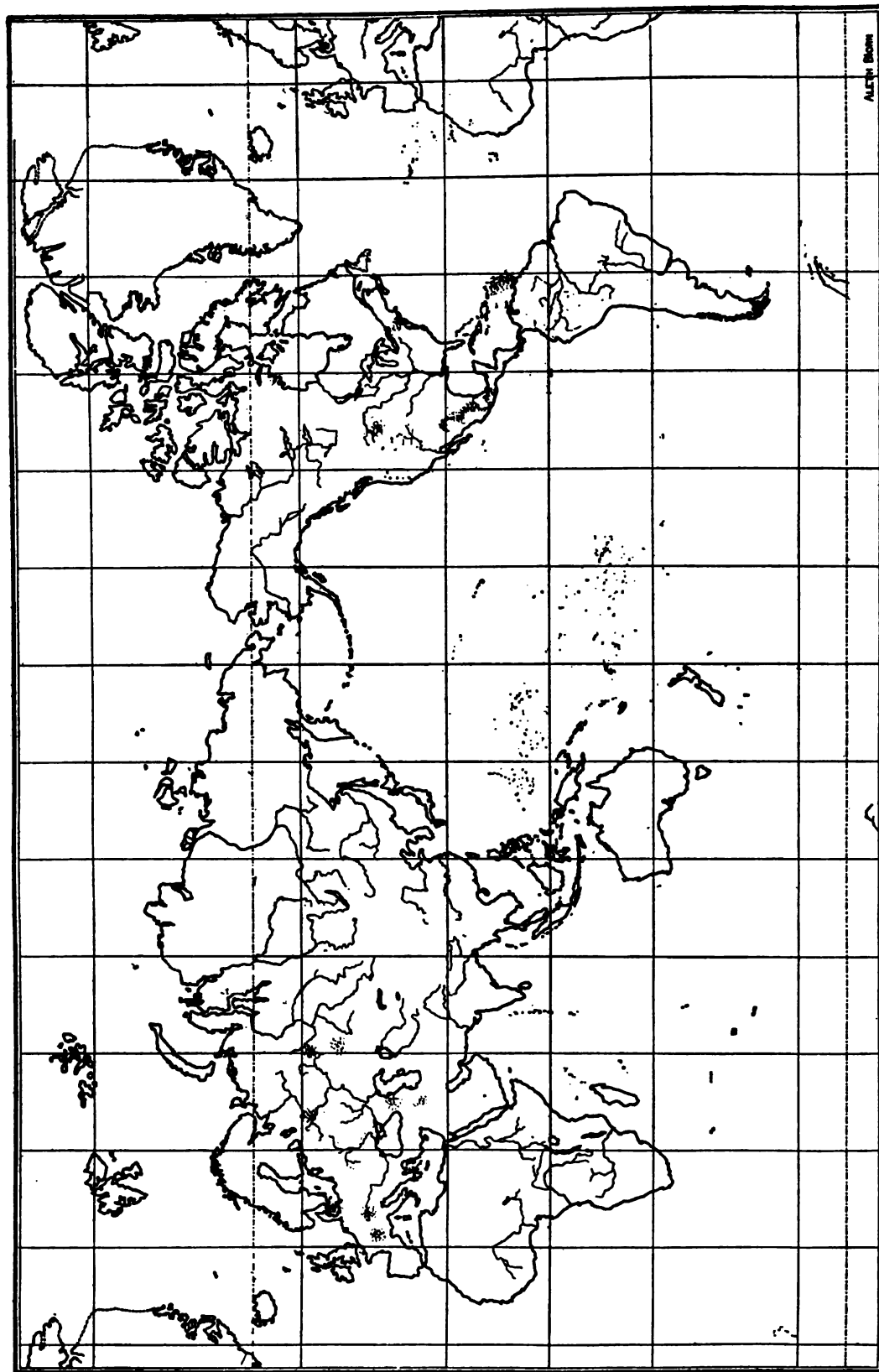
Holmes
Collection.

Haast
Collection.

James Hall
Collection.

AN important collection illustrating the geology of Palestine and Sinai was given to the Museum in 1869, the first year of its existence, the Holmes Collection of Post Pliocene fossils from South Carolina was purchased in 1873, and the Haast Collection of New Zealand Moa bones in 1874. The acquisition of this material, together with other valuable acquisitions, led the Trustees in 1875 to direct special effort "toward establishing the Geological Department upon such a basis, both as to its extent and authority, as to render it of high and permanent scientific value."

The first step toward this end was the purchasing of the collection of fossils and other geological material belonging to Professor James Hall, of Albany. This material was collected almost entirely by Professor Hall, with whose investigations as State Geologist it is identified, much of it having been gathered during the Survey of New York State. Large collections had also been made from the Western States for the purpose of fixing the New York geological nomenclature. It comprised 80,000 to 100,000 specimens, including about 7,000 types and figured specimens. The acquisition of this collection placed the Museum in the lead among American institutions in respect to Paleozoic fossils. Especially noteworthy in the Hall Collection, aside from the New York series, are the Potsdam fossils from Minnesota; Trenton forms from Wisconsin and Iowa; Niagara fossils from Indiana; corals from the falls of the Ohio River; crinoids from Burlington, Iowa; and the Lower Carboniferous fauna of Spergen Hill, Indiana. The price paid for the Hall Collection was \$65,000, \$40,000 of which was specially subscribed by the Trustees and friends of the Museum. The duplicates were separated into the collections, some of which were sold, others used in exchange for other material.



CHIEF AREAS OF EXPLORATION IN GEOLOGY AND INVERTEBRATE PALEONTOLOGY, DURING THE YEARS 1897-1909.

GEOLOGY AND FOSSIL INVERTEBRATES

The Holmes Collection of fossils of South Carolina, vertebrate and invertebrate, from the Pliocene and Postpliocene periods, was purchased in 1873 from Professor Francis S. Holmes. It included the types of the species described in Tuomey and Holmes's works. Holmes
Collection.

In 1878 valuable geological material was received from Professor C. H. Hitchcock in exchange for two series of Hall duplicates. It contained a complete set of Vermont and New Hampshire rocks, numbering about 2,000, illustrating the geological survey of those States under the direction of Professor Hitchcock; types of Tertiary plants from Brandon, Vermont; also rocks and fossils from Maine. Hitchcock
Collection.

The collection of rocks and fossils gathered by the United States Survey of the 40th parallel was received on deposit in 1878. It contained 3,523 fossils, 3,880 rocks, and also 2,800 microscopic sections of rocks.

The Department of Geology was greatly enlarged in 1886 by the acquisition of the series of building stones. This series, a duplicate of that collected under the direction of the 10th Census Commission, was prepared at the expense of Mr. Morris K. Jesup, and contained 1,053 four-inch blocks, polished on the face and variously dressed on the other sides. The specimens represent nearly every State and contain samples of all rocks used for building and ornamental purposes. Building
Stones.

A group of important fossils from the Calciferous and Chazy formations of Vermont was received in 1886 as a donation from Professor H. M. Seely, President Ezra Brainerd, and other members of the faculty of Middlebury College.

The Tyrrell Collection of Placoderm fishes from the Devonian rocks of Ohio was presented in 1899 by Mr. William E. Dodge, 2d.

Some of the collections acquired by purchase or exchange, besides those mentioned previously, are the series of plants of the Devonian age, received in 1882 in exchange for one series of Hall duplicates; Palestine fossils purchased in 1886 from Rev. Dr. William Bird of Abeih, Syria; collection of Utica Slate fossils, comprising about 200 specimens purchased in 1890; collection of Silurian fossils of Ohio, purchased in 1904; the Woodman collection of fossils, corals, and shells

HISTORY OF THE MUSEUM

from Iowa and Illinois purchased in 1878, and the Braun Collection of fossil crinoidea, purchased in 1880.

Meteorites.

The Museum's collection of meteorites in 1896 represented twenty-six falls and finds, thirteen of which were aërosiderites (iron meteorites), seven aërosiderolites (iron-stone meteorites), and six aërolites (stone meteorites), discovered in various parts of the world, and received with the Bailey Collection of minerals, and through individual purchases and gifts.

The Ward-Coonley Collection of meteorites was deposited with the Museum in 1901. This collection is said to be the largest in the world and to be exceeded in value only by that of Vienna. It contains 1,600 specimens, representing 603 falls and finds.

The meteorites now in the Foyer belonging to the Museum collection are: Cañon Diablo, from Arizona, weight 1,087 lbs.; Brenham (two masses, 75 and 52.5 lbs.), from Kansas; Forest City (75 lbs.), from Iowa; and Long Island (86 lbs.), from Kansas.

The Tucson meteorite is a reproduction in cast iron, the original of which was found in Arizona and is now in the National Museum of Washington. The model was presented by the Smithsonian Institution. The weight of this cast is the same as that of the original, 1,400 lbs.

"Ahnighito."

"Woman."

"Dog."

The three meteorites from Cape York, Greenland, known as "Ahnighito," or "The Tent," "The Woman," and "The Dog," were visited by Commander Peary in 1894 and 1895, and brought to New York in 1895 and 1897. "Ahnighito," the largest and heaviest meteorite known, weighs 36.5 tons and was obtained by Commander Peary in 1897. "The Woman," which weighs 6,000 lbs., and "The Dog," 1,100 lbs., were brought back in 1895. All were acquired by the Museum in 1909 as the gift of Mrs. Jesup.

"Willamette" Meteorite.

"Willamette," the gift of Mrs. William E. Dodge, 2d (cost, \$20,600), is the largest meteorite ever found in the United States and one of the three largest known. It weighs 31,107 lbs., and was discovered in 1902 near Portland, Oregon. With the acquisition of "Willamette," in 1906, the Museum's collection of meteorites became one of the finest known to science.

GEOLOGY AND FOSSIL INVERTEBRATES

"Selma," the largest entire stone meteorite known, was found in "Selma," Alabama in 1906 and purchased for \$1,200. It weighs 306 lbs.

The latest addition to this department was the "Guffey" meteorite, "Guffey," weighing 682 lbs., and purchased in 1909 for \$1,500.

EXPEDITIONS

The various expeditions by Associate Curator Hovey added greatly to the value of the department, both in extent of collections and the scientific data obtained. The publication of the investigations of the volcanic phenomena following the eruptions in Martinique and St. Vincent in 1902 placed the name of the Museum among the leading contributors to volcanology.

SCIENTIFIC STAFF

Professor Robert Parr Whitfield has been in the active service of the Museum since 1877. The Museum's report for that year states that "the purchase of the Hall Collection has made the Departments of Geology and Palæontology so important that the services of a special Curator have been required and Professor R. P. Whitfield has been employed to take charge of that part of our collections." He has served the Museum continuously as Curator of the Department of Geology and Invertebrate Palæontology since that time, devoting himself assiduously to the cataloguing and arranging of the collections. It was chiefly at his suggestion that the Bulletin was established as a medium for publishing the scientific research of the Curators, and he himself has made many valuable contributions to it. The Department of Marine Invertebrate Zoölogy was also under his charge from 1890 until 1901, when it was established as a separate Department under Dr. Bumpus. Professor Whitfield was Curator of Mineralogy and Conchology also until they were made a separate department in 1901.

Robert Parr
Whitfield,
A.M.
1877-1909.

HISTORY OF THE MUSEUM

Louis Pope
Gratacap,
Ph.B., A.B.,
A.M.
1876—

Mr. Louis Pope Gratacap has been associated with the Museum since 1876. He was appointed Assistant Curator of Mineralogy in 1880. This department was placed under Geology in 1882, and Mr. Gratacap became Assistant Curator of Geology. In 1901 he was made Curator of Mineralogy, in charge also of Conchology, and in 1902 Curator of the Department of Mineralogy and Conchology, which office he still holds.

Edmund Otis
Hovey, A.B.,
Ph.D.
1894—

Dr. Edmund Otis Hovey has been associated with the Museum since January, 1894. He came at that time as an Assistant Curator in the Department of Geology, Mineralogy, Conchology, and Marine Invertebrate Zoölogy, and in 1901 was appointed Associate Curator of the Department of Geology and Invertebrate Palæontology. Dr. Hovey conducted investigations at the volcanoes of Mt. Pelé and La Soufrière for the Museum in 1902, 1903, and 1908, and the published results of his research have been valuable contributions to our knowledge of the phenomena.

BENEFACTORS—DONORS OF SPECIMENS TO VALUE OF \$200 OR MORE—1869-1909

Beirût Protestant College,
Bodwell Granite Company,
H. Booth,
T. B. Brooks,
Calumet and Hecla Mines Com-
pany,
Geological Survey of Canada,
Central Pacific Railroad Company,
James M. Constable,
Copper Queen Consolidated Min-
ing Company,
E. Leonard Corning,
Sir William Dawson,

Delaware, Lackawanna and West-
ern Coal Company,
Sidney Dillon,
D. Stuart Dodge,
William E. Dodge, 2d,
Mrs. William E. Dodge, 2d,
James Douglas,
State Geological Survey of Georgia,
William C. Greene,
John P. Haines,
James Hall,
Morris K. Jesup,
Mrs. Morris K. Jesup,

GEOLOGY AND FOSSIL INVERTEBRATES

| | |
|--------------------------------|---------------------------------|
| MacDonald, Field and Company, | Samuel Sloan, |
| Jules Marcou, | Charles E. Slocum, |
| O. C. Marsh, | D. Jackson Steward, |
| E. A. Mearns, | Robert L. Stuart, |
| J. Pierpont Morgan, | Frank Springer, |
| State Geological Survey of New | Augustus Taber and Brothers, |
| Jersey, | James Terry, |
| Francis C. Nicholas, | U. S. Fortieth Parallel Survey, |
| J. W. Powell, | U. S. Geological Survey, |
| Raphael Pumpelly, | A. W. Vogdes, |
| A. L. Rawson, | William Wallace, |
| Rutland Marble Company, | R. P. Whitfield, |
| Henry M. Seely, | Joseph Willcox. |

MINERALS

THE mineral collections began with the purchase of the Bailey Collection, the acquisition of which at once led to the establishment of a Department of Mineralogy.

Bailey
Collection,
\$4,000.

The Bailey Collection of Minerals contained 7,000 cabinet specimens and was purchased in 1874 for \$4,000. It was stored in the Arsenal until transferred to the Geology Hall in 1882.

The minerals exhibited at the Philadelphia Centennial Exposition by the Governments of Canada, Spain, Brazil, Tasmania, and New Zealand, were given to the Museum in 1876.

J. Pierpont
Morgan
Collections.

The development of the Department of Mineralogy since the Bailey Collection was secured has been due largely to the generosity of Mr. J. Pierpont Morgan, to whom the Museum is indebted for its gem collection and the Bement Collection of minerals. The first part of the Tiffany gem collection was presented in 1890, and consists of the exhibits made by the Tiffany Company for display at the Paris Exposition of 1889. Especially noteworthy are the series of sapphires, topazes, beryls, garnets, and tourmalines. The gem collection was more than doubled in 1900 by the acquisition of the Tiffany Exhibit at the Paris Exposition of 1900, comprising 1,453 entries, which was purchased by Mr. Morgan (estimated value \$100,000) and presented to the Museum. The Tiffany gem collection has been continuously increased by gifts from its founder, until to-day it ranks first in size, value, and importance in the country.

Bement
Collection,
\$100,000.

The Bement Collection of minerals was presented to the Museum in 1900 by Mr. J. Pierpont Morgan (estimated value \$100,000). This collection was brought together by Mr. Clarence S. Bement, and had long had the reputation of being the finest private collection of exhibition specimens in the world. It contained 12,000 specimens, including many rare species.

MINERALS

As part of the Bement collection the Museum received a series of meteorites, containing representatives of nearly 500 falls and finds.

Another important collection in the Department of Mineralogy is the series of specimens of malachite and azurite, which was presented by the Copper Queen Consolidated Mining Company and added to by Messrs. William E. Dodge, D. Willis James, and Professor James Douglas.

Copper
Queen Con-
solidated
Mining Com-
pany
Collections.

The acquisition of the Spang collection of minerals added a large number of new species, and also made a general improvement in many groups. It was purchased in 1891 for about \$9,000.

Spang
Collection,
\$9,000.

In 1904 an endowment of \$10,000 for the Department of Mineralogy was received from Miss Matilda W. Bruce. The income from this fund has made possible the purchase of many desirable minerals.

CHIEF BENEFACTORS OF THE DEPARTMENT OF MINERALOGY

GIFTS TO THE VALUE OF \$500 OR MORE

Hugh Auchincloss,
George S. Bowdoin,
Matilda W. Bruce,
Brazilian Commission of Centen-
nial Exposition,
Copper Queen Consolidated Min-
ing Company,
James M. Constable,
William E. Dodge,
James Douglas,
Edward L. Dufoureq,
A. E. Foote,

James B. Haggin,
D. Willis James,
Morris K. Jesup,
Mrs. Morris K. Jesup,
M. S. Mephram,
J. Pierpont Morgan,
New York Mineralogical Club,
Minas Pedrazzini Company, Arizpe,
Sonora, Mex.,
Ernest Schernikow,
Robert L. Stuart,
Mrs. Robert L. Stuart,

D. Jackson Steward.

SHELLS, INSECTS, INVERTEBRATE ZOÖLOGY

CONCHOLOGY

Early Collections.

COLLECTIONS of shells were among the first gifts to be received by the Museum in the early days at the Arsenal, and they soon became one of the chief sources of attraction in the Museum. Early in 1870 one hundred specimens, representing fifty species, were presented by Mr. Albert Storer, and during the same year a collection of land and fresh water shells from Switzerland and Württemberg were received from Mr. Frank Daulte; a collection of shells and alcoholic mollusca collected by Professor Bickmore in the East Indian Archipelago; and the conchological collection gathered and presented by Mr. Coleman T. Robinson, containing about 1,000 species represented by about 4,000 specimens.

Jay Collection.

These collections formed the nucleus of a Department of Conchology, which in 1874 was firmly established by the acquisition of the Jay Collection of shells, presented by Miss Catharine L. Wolfe as a memorial of her father. It numbered 50,000 specimens and contained 10,000 species and many varieties. This collection, with the rare conchological library, together known as the "Wolfe Memorial," was formed by Dr. John C. Jay, from whom it was purchased by Miss Wolfe for \$25,000. It was exhibited in the Arsenal until the opening of the new building, where it was prominently displayed on the first floor.

Crooke Collection.

The number of species in the Conchological Department was greatly increased in 1890 when Mr. John J. Crooke presented his valuable cabinet of land and fresh-water shells, containing about 3,000 specimens and 2,300 species.

Steward Collection.

A series of marine shells, notable for the beauty and perfection of the specimens, and containing a large number of very rare examples, was presented in 1890 by Mr. D. Jackson Steward.

SHELLS, INSECTS, INVERTEBRATE ZOÖLOGY

The acquisition of the Haines collection of shells greatly added to the quality and scope of this Department. It consisted of marine, fresh-water, and land shells, being especially rich in the last-named. The collection contained 3,891 species, and was purchased in 1895 for \$12,000.

Haines
Collection.

Nearly 18,000 specimens of land and fresh-water shells, with 1,000 species, were received in 1898 from the estate of Professor Edward D. Cope.

Cope
Collection.

A collection of shells important to the Museum, because of the more showy genera, was presented by Mr. Albert H. Storer in 1904. It comprised about 3,500 specimens.

Storer
Collection.

To Mr. F. A. Constable the department is indebted for many fine specimens of shells, principally from China and Japan. Between the years 1901 and 1905 he presented 737 species from Japan, 464 specimens from China, besides 18,000 specimens representing 4,000 species from other localities.

Constable
Collection.

The collection of shells from the Philippine Islands numbers about 5,530 specimens, 700 of which were gifts from Colonel C. A. H. McCauley and Dr. Hugh M. Smith, the remainder, containing 477 species and varieties, being received through an exchange.

Philippine
Islands.

The specimens now in the Conchological Department number about 200,000, embracing over 16,000 species, and representing localities all over the world.

CHIEF BENEFACTORS OF THE DEPARTMENT OF CONCHOLOGY

GIFTS TO THE VALUE OF \$500 OR MORE

Albert S. Bickmore,

John J. Crooke,

Fred. A. Constable,

E. D. Cope,

Frank Daulte,

Rev. Richard B. Post,

Coleman T. Robinson,

D. Jackson Steward,

Albert H. Storer,

R. A. Witthaus,

Mrs. M. Witthaus,

Miss Catharine L. Wolfe.

ENTOMOLOGY

The collections of insects presented to the Museum in 1870 by Baron Osten-Sacken and Mr. Coleman T. Robinson were so important that Mr. Robinson was made curator of them, serving without salary till his death in 1872. The number of specimens in the department was about 20,000. A large part of these collections was subsequently destroyed by pests, so that in 1886, when a separate Department of Entomology was again established, the total number of specimens was less than 30,000, and many of these were in poor condition.

**Osten-Sacken
Collection.**

The collection presented by Baron Osten-Sacken in 1870 comprised about 3,800 North American insects of all orders except Lepidoptera, and contained 2,000 specimens of beetles, representing 1,000 species.

**Robinson
Collection.**

The series of American and European lepidoptera presented by Mr. Coleman T. Robinson in 1870 consisted of about 10,000 specimens, representing 3,000 species.

**First Study
Collection.**

In 1874 Mr. R. A. Witthaus gave a collection of American coleoptera containing about 8,000 specimens, and 2,000 species, desiring that it should form the nucleus of a cabinet to be devoted exclusively to the use of persons especially interested in entomology. This gift marked the beginning of the study collections.

**Drexel
Collection.**

A collection numbering 2,235 specimens of insects, butterflies, and moths was the gift of Mr. Joseph W. Drexel, in 1880.

**Southwick
Collection.**

About 5,600 insects collected in New York and New Jersey by Mr. E. B. Southwick were presented by him in 1886.

The material acquired previous to 1889 was almost entirely through gift. Since 1889 the additions by gift, purchase, and expedition have gained for this Department an enviable reputation, especially in its collections of lepidoptera, formicidæ, and diptera.

**Jesup Col-
lection of
Economic
Entomology.**

The insect groups in the Jesup Collection of economic entomology, begun in 1889, represent the life history and other phases of insects injurious to trees, and are illustrated by their food plants made in wax, showing the injury done to the trees by the insects. These

ENTOMOLOGY

groups, of which there are fifty-three, were prepared at the expense of Mr. Morris K. Jesup.

LEPIDOPTERA—BUTTERFLIES AND MOTHS

The present collection of lepidoptera contains about 100,000 specimens, representing 10,000 species.

One of the most important gifts to this section of the department, and one which extended over several years, is the collection of butterflies presented by the Very Reverend Eugene Augustus Hoffman, D.D., LL.D. Dr. Hoffman's desire was to extend the Museum's collection so as to include the more important species of the world. He began, in 1897, by purchasing (\$508) a series of the butterflies found in America north of Mexico, containing 1,650 specimens, representing 475 species. The next year he added 2,250 specimens collected in Mexico, Central and South America, and during the following four years purchased and presented various collections, containing over 2,500 specimens from South America, Australia, and Asia. Hoffman
Collections.

Dr. Hoffman also provided funds for Museum expeditions to the Black Mountains, North Carolina, in 1900, 1901, and 1902. The material thus obtained numbered fully 13,200 specimens of various insects, among which were many butterflies and moths.

After the death of Dr. Hoffman in 1902, many additions were made as the result of expeditions by Curator Beutenmüller, the expenses for which Dr. Hoffman had provided.

Since 1902, Mr. Samuel V. Hoffman has generously continued the work begun by his father, the Very Reverend Eugene A. Hoffman, in his efforts to extend the butterfly collection. His contributions include 364 African butterflies, 3,600 specimens of North American and exotic lepidoptera, and a collection presented in 1908 of specimens from Mexico, Brazil, Japan, and Africa. Samuel V.
Hoffman
Collection.

The collection which had been gathered by Dr. S. Lowell Elliot was presented to the Museum by Mrs. Elliot in 1890. It contained 6,600 butterflies and moths in absolutely perfect condition, almost all of which were bred specimens, with many of the rarer types repre- Elliot
Collection.

HISTORY OF THE MUSEUM

sented by entire broods showing the variation and intergradation of the species.

Angus
Collection.

About 13,000 butterflies, moths, beetles, grasshoppers, wasps, etc., were contained in the collection presented by Mr. James Angus in 1891.

Edwards
Collection.

The Harry Edwards collection was one of the largest private collections in the world. It numbered 150,000 specimens (60,000 lepidoptera), many of which were types, and 20,000 species, gathered from all parts of the globe. It was purchased in 1892 for \$15,000, \$9,600 of which was received from friends of Mr. Edwards in response to an appeal from a committee headed by Mr. A. M. Palmer, which had been organized to secure the collection for the Museum.

Schaus
Collection.

The Schaus collection comprises some 31,000 specimens of butterflies and moths and was presented by Mr. William Schaus in 1897 and 1906. About 5,000 specimens of the collection representing the principal known genera of Old World moths were gotten together by Mr. Schaus as a study collection for comparison with New World forms. It contains many type specimens and species authentically determined by comparison with British Museum types, a feature making the collection highly useful to specialists and students. (Estimated value of Old World Collection, \$10,000.) Some 26,000 specimens were gathered by Mr. Schaus during three years' search in Mexico and Central and South America.

Sachs
Collection.

A series of butterflies and moths from Africa, India, and other parts of the world was presented by Mr. William Sachs in 1900. It contained about 300 specimens, many of which were very rare.

About 500 butterflies were collected in Sumatra in 1895 by Mr. Rudolf Weber. Almost all of them were new to the Museum collections. Seven hundred and fifty were collected by Mr. F. C. Nicholas in Honduras and U. S. of Colombia in 1895.

DIPTERA—FLIES

The Museum's collection of diptera attained the first rank of scientific importance in 1903, through the addition to its collection of over 8,000 North American flies, containing more than 1,000 species and

ENTOMOLOGY

170 types. The collection was the gift of Dr. William Morton Wheeler.

A collection containing 400 specimens of North American diptera was purchased in 1906.

FORMICIDÆ—ANTS

The collection of ants numbers not less than 50,000 specimens and 3,000 species, received largely through gift and expeditions.

To Professor Auguste Forel the Museum is indebted for a large and valuable collection of ants presented in 1907. It contains 3,519 specimens, representing 1,385 species. Forel
Collection.

The largest collection of formicidæ in this country, and one of the three largest in the world, was presented in 1908 by Dr. William Morton Wheeler. It contained many types and cotypes, and nearly every species is represented by long series of specimens—often many hundreds in number. Wheeler
Collection.

The large termite nests and ant hills on exhibition were collected by Mr. Francis Child Nicholas in Hayti and U. S. of Colombia, and presented in 1897 by Mr. Henry C. Pratt.

On a collecting trip to Florida and the Bahamas in 1904 Professor Wheeler obtained a practically complete series of the ants of Andros and New Providence Islands, containing about fifty species, together with a fine series of mollusks, myriapods, arachnida, etc. Bahamas.

An extensive collection of the ants of Culebra and Porto Rico, containing about 5,000 specimens and representing about 60 species and subspecies, was obtained by Dr. Wheeler on an expedition in 1906. Porto Rico.

A collection of Madagascar formicidæ purchased in 1904 contains 373 specimens and 83 species.

COLEOPTERA—BEETLES

The present collection of beetles has been acquired through expeditions and field work of Curator Beutenmüller, as well as by gift and purchase. Among those received as gifts are the 2,000 specimens

HISTORY OF THE MUSEUM

collected by the late Mr. George D. Bradford, and presented by his mother in 1895; 500 North and South American beetles, presented by Mr. William Menzies, also in 1895; a fine collection from Mt. Kinabalu, British North Borneo, presented in 1904 by Messrs. G. A. Goss and A. D. Dodge.

Godman
Collection.

The collection was greatly enlarged in 1907 through the generosity of Mr. F. Du Cane Godman, a well-known English scientist and author of the famous work "Biologia Centrali-Americana." The collection contains more than 4,000 specimens from Mexico and Central America, representing 1,679 species, many of which were described new to science in the "Biologia." It is of great scientific importance, since it is part of the material upon which the Coleoptera section of the "Biologia" was based.

Several thousand beetles, containing many new to science, also many extremely rare specimens, were collected on the Curator's various trips to the Black Mountains of North Carolina.

The additions to the beetle collection by purchase are: 2,000 specimens of European beetles, purchased in 1895, and 300 tiger beetles purchased in 1907.

EXPEDITIONS

The expeditions by Curator Beutenmüller to the Black Mountains of North Carolina in 1895, and between 1900 and 1906, yielded an immense amount of insect material. On the last six trips over 31,000 specimens were collected, among which were many new as well as very many rare species.

The funds for the trips made in 1902, 1903, and 1906 were provided by the Very Rev. E. A. Hoffman and Mr. Samuel V. Hoffman.

Through local field work by the Curator, many thousand insects of various orders have been obtained, as well as a large collection of insect galls, and through the coöperation of expeditions sent out by other departments of the Museum, the Department of Entomology has received valuable collections from many localities—especially

ENTOMOLOGY

Sumatra, where 1,600 specimens were collected, and Siberia, Africa, Patagonia, Jamaica, W. I., Mexico, Bolivia, and various parts of the United States.

The accessions of collections through gift, besides those previously mentioned, include: 5,000 specimens of various orders, collected by George Dexter Bradford, and presented in 1896 by his mother; a valuable collection of gall insects, containing several thousand specimens and many types donated in 1903 by Mrs. Margaret Bassett; a collection of more than 1,000 vials of spiders from the United States, the work of the young naturalist, Horace Britcher, donated by his mother and friends; 2,600 butterflies, bees, wasps, beetles, etc., from the State of Amazonas, Brazil, presented in 1907 by Mr. Morris K. Jesup.

Among other important collections purchased in recent years are: 3,000 insects from localities within fifty miles of New York (1894); 5,000 insects from Merida, Venezuela (1904); collection of Orthoptera, containing 825 specimens and representing 255 species (1905); 700 Cuban insects (1907).

SCIENTIFIC STAFF

Mr. Coleman T. Robinson gratuitously served as Curator of Entomology from 1870 until his death in 1872. His work was in connection with the large collection of Lepidoptera which he had presented.

Coleman T.
Robinson.
1870-1872.

Baron Osten-Sacken gave valuable assistance in arranging the collection of insects which he presented in 1870.

Baron Osten-
Sacken.
1870.

Dr. E. B. Southwick was in charge of the Department of Entomology from July, 1886, to 1887. His attention was devoted to the classification and placing on exhibition of the specimens. Dr. Southwick collected in the vicinity of New York in 1886.

E. B. South-
wick.
1886.

Mr. William Beutenmüller joined the Museum in 1888 and since 1893 has been associated with it as Curator of the Department of Entomology. He has made frequent expeditions to the Black Mountains of North Carolina in search of insects, the published

William
Beutenmüller.
1888-

HISTORY OF THE MUSEUM

results of which formed valuable contributions to the knowledge of entomology.

Raymond
Lee Ditmars.
1891-1897.

Mr. Raymond Lee Ditmars, the present Curator of Reptiles in the New York Zoölogical Park, served the Museum as Assistant Curator of Entomology from 1891 until 1897. He also prepared the Museum's Guide Leaflet on "Reptiles of the Vicinity of New York City," which was published in 1905.

INVERTEBRATE ZOÖLOGY

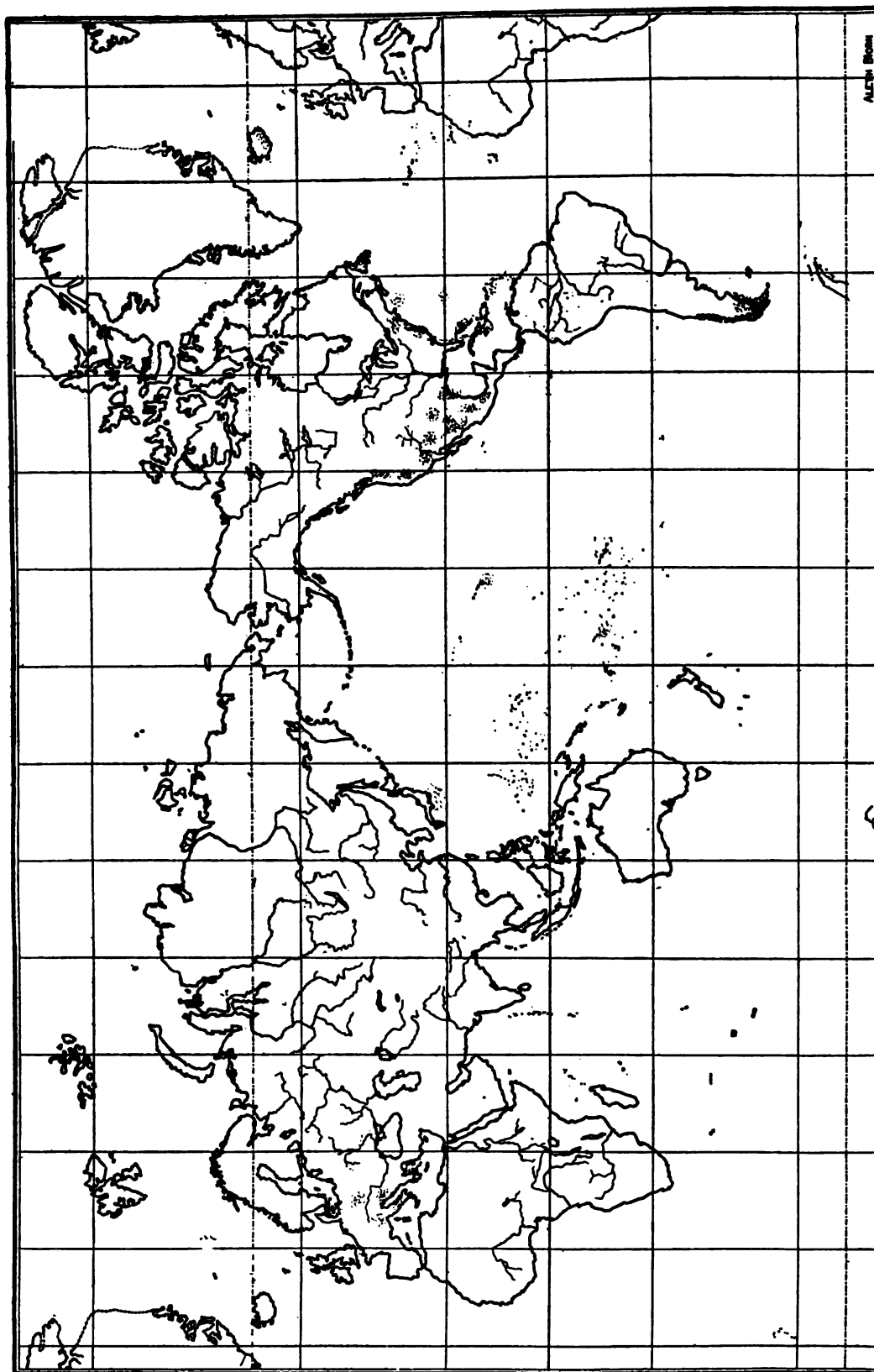
The present Department of Invertebrate Zoölogy was established in 1901. The departments of Conchology and Entomology were merged in it in 1909. The collections in Invertebrate Zoölogy, except in regard to shells, developed slowly through the first years of the Museum's life, though many gifts of corals, sponges, sea urchins, etc., were received before the Arsenal was vacated. In 1885 this material was brought over to the new building where, because of lack of space, only the most important specimens were exhibited, the remainder being stored in the basement, where it remained until about 1890. Most of the collections, excepting the models of the lower invertebrates, which were made at the Museum, have been acquired through gift and expeditions. Until 1901 Prof. R. P. Whitfield served as curator of these collections.

The first important accession to this Department was the collection of corals presented in 1885 by Mr. Percy R. Pyne.

Invertebrate material ranging from mollusca and crustaceans through the lowest branches of the animal kingdom, from the Atlantic and Pacific waters, have been received at various times since 1873 as a result of the deep-sea dredgings conducted by the United States Fish Commission.

Protozoans.

Many of the animals in the various groups of invertebrates are so minute, or their anatomical structure is so complicated, that it is not practicable to place the original specimens on exhibition. In order



CHIEF AREAS OF EXPLORATION AND COLLECTION OF INVERTEBRATES UP TO THE YEAR 1909.



INVERTEBRATE ZOÖLOGY

to bring out more clearly the structure of these animals, and their relation to man, large models, carefully constructed, have been prepared. This is especially true in the lowest group of the animal kingdom, namely—the Protozoans. The models are constructed in wax and glass, and are worked out with the most careful detail.

The sponge collection represents extensively the forms found in Bermuda, the Bahamas, and Japan. Almost all of this material, excepting that from Japan, was collected by Professor R. P. Whitfield. A series of siliceous sponges from Japan, containing exceptionally fine examples, was purchased in 1901. The collection contained thirty-seven specimens, representing twenty-six species. Sponges.

The superb collection of corals is representative of the forms found in the East and West Indies, Bermudas, Bahamas, Hawaiian Islands, New Zealand, and Florida, and have been acquired largely through the generosity of Mr. Percy R. Pyne, Mrs. R. P. Dana, Mr. D. Jackson Steward, the Pacific Mail S. S. Company, Dr. D. Bryson Delavan, and Professor R. P. Whitfield. One hundred and twenty-five unusually fine specimens from Florida and the Pacific Ocean were given by Mr. Pyne in 1885. Some beautiful forms were contained in a collection from the West Indies, given by Mrs. R. P. Dana, and from the East Indies by Mr. D. Jackson Steward. Most of the corals from Florida, Bermuda, and the Bahamas were collected, and many presented, by Professor R. P. Whitfield. Of special note is the specimen of *Madrepora palmata*, which is probably the finest ever collected, and the unusually large and perfect specimen of *Orbicella annularis*. Corals.

A representative series of corals from the Hawaiian Islands was obtained on an expedition by Dr. J. E. Duerden in 1905, when 1,500 specimens representing between thirty and forty species were collected, forming probably the largest collection of Hawaiian corals ever made.

An expedition to the Bahama Islands in 1908 under Dr. William Morton Wheeler in search of material for use in a coral reef group yielded many choice specimens of corals, including an exceptionally

HISTORY OF THE MUSEUM

fine example of Madreporal coral, measuring ten feet across and weighing nearly two tons.

A series of hydrozoans and actinozoans, containing forty-seven specimens mounted in alcohol and representing the marine life of the Bay of Naples, was received in 1896 as a gift from Mr. William E. Dodge, 2d.

Echinoderms,
Annulates,
Arthropods,
Mollusks.

The other groups of invertebrates, namely, the echinoderms, annulates, and arthropods (aside from insects) are represented by typical specimens, although our collections are not extensive. The structure and anatomy of the more complicated invertebrates, such as the clam and the oyster, are shown by models enlarged six to seven diameters.

Models have also been prepared showing the consecutive stages in the development of the eggs of different forms, namely: mollusk, brook trout, frog, and lancelet. These series, in each case, embody the researches of investigators in their particular subjects and are prepared under their supervision or from their published works.

Malaria
Mosquito.

To bring out more clearly the relation between man and the lower animals, a series of models, illustrating the development and structure of the Malaria Mosquito and the life cycle of the Malaria Organism, has been prepared.

Marine
Habitat
Groups.

The Marine Habitat Groups represent the typical life of several marine species. These include sea urchins, brittle stars, land crabs, and sponges.

Marine invertebrate material acquired through expeditions, in addition to those previously mentioned, includes many species of sea fans, gorgonias, crustaceans, etc., from Bermuda, and echinoderms, sea anemones, sea cucumbers, starfish, etc., from the Bahamas, all collected and presented by Professor R. P. Whitfield; actinians and alcyonarians from the West Indies, collected by Dr. J. E. Duerden; sea fans, etc., from the Bahamas, collected by Professor William Morton Wheeler; sea urchins, etc., from Newfoundland, collected by Mr. L. P. Gratacap; and other invertebrate material from Massachusetts, Florida, New Mexico, Alaska, Patagonia, Siberia, and the Philippine Islands.

INVERTEBRATE ZOÖLOGY

CHIEF BENEFACTORS OF THE DEPARTMENT OF INVERTEBRATE ZOÖLOGY

GIFTS TO THE VALUE OF \$500 OR MORE

| | |
|-------------------------|---------------------------------|
| J. A. Britcher, | M. M. Metcalf, |
| Mrs. Richard P. Dana, | Pacific Mail Steamship Company, |
| D. Bryson Delavan, | Percy R. Pyne, |
| William Earl Dodge, 2d, | D. Jackson Steward, |
| Gilman A. Drew, | U. S. Bureau of Fisheries, |
| Auguste Forel, | W. M. Wheeler, |
| Edward H. Harriman, | R. P. Whitfield, |
| Morris K. Jesup. | |

SCIENTIFIC STAFF

In 1901 Dr. H. C. Bumpus became Assistant to the President and was also placed in immediate charge of the Department of Invertebrate Zoölogy. His time was so fully occupied with administrative work as Assistant to the President that he could devote very little time to the development of this Department. Accordingly, in 1902, Dr. William Morton Wheeler succeeded him as Curator of the Department, Dr. Bumpus having been appointed Director of the Museum.

Hermon
Carey
Bumpus,
Ph.D., Sc.D.
1901-1902.

Dr. Wheeler served until 1908, when he resigned, having been appointed to the Professorship of Economic Entomology in Harvard University. The Museum at this time made him Honorary Curator of Social Insects, and as such he will continue to be identified with the work. Dr. Wheeler was elected a Patron of the Museum in 1908 in recognition of his gift of his collection of formicidæ.

William
Morton
Wheeler,
Ph.D.
1902-1908.
Honorary
Curator,
1908-

The present Curator of this Department is Dr. Henry E. Crampton, who assumed his work January 1, 1909. Dr. Crampton is well known as a writer and investigator and for several years has held the Chair of Zoölogy at Barnard College.

Henry E.
Crampton,
A.B., Ph.D.
1909-

Mr. Louis Pope Gratacap has had charge of the mollusca since 1880. In 1901 he was appointed Curator of Mineralogy, in charge also of Conchology, and in 1901 Curator of the latter also. His present title in this Department is Curator of Mollusca.

Louis Pope
Gratacap,
Ph.B., A.B.,
A.M.
1880-

HISTORY OF THE MUSEUM

George Herbert Sherwood, A.B., A.M. 1901-

Mr. G. H. Sherwood was appointed Assistant Curator of Invertebrate Zoölogy in November, 1901. During the curatorship of Dr. Bumpus he attended to the routine work of the Department, but particularly carried out the idea of the Director for bringing about a more intimate relation between the Museum and the educational system of the City. This included the development of the circulating collections which was begun in December, 1903, and the inauguration of the lectures for school children. With the retiring of Professor Bickmore from active service in 1905, Mr. Sherwood was appointed Curator of the Department of Public Instruction. In 1906 he was appointed Assistant Secretary and Assistant Treasurer.

J. E. Duerden, Ph.D. 1902-1906.

Dr. J. E. Duerden was identified with the Museum as Honorary Curator of Cœlenterates from 1902 until 1906. He has contributed several papers to the BULLETIN.

B. E. Dahlgren, D.M.D. 1902-1908.

Dr. B. E. Dahlgren joined the Museum in 1902 as an Assistant in the Department of Invertebrate Zoölogy. He was appointed Curator of the Department of Preparation and Installation when it was established at the beginning of 1903, and served in this capacity until 1906, when he was appointed an Assistant Curator of the Department of Invertebrate Zoölogy. Dr. Dahlgren was especially interested in the preparation of biological models. He served till 1908.

Roy W. Miner, A.B. 1905-

Mr. Roy W. Miner has been associated with the Museum since 1905 as Assistant Curator in the Department of Invertebrate Zoölogy. He has given special attention to the installation of the collections on exhibition and is carrying on researches on the sponges and myriapods.

Frank E. Lutz, A.B., A.M., Ph.D. 1909-

Dr. Frank E. Lutz was appointed Assistant Curator in this Department in 1909. Dr. Lutz has been a research assistant in the Carnegie Institution at Cold Spring Harbor, Long Island, and has published a number of papers on the general subjects of Inheritance and Variation.

Other specialists who have served the Museum through this Department are Professor Verrill, who was engaged in 1894 to identify undetermined invertebrate material; Dr. Tarleton H. Bean, who identified and catalogued the fishes received from the Aquarium in 1898;

INVERTEBRATE ZOÖLOGY

Mr. Frederick M. Holbrook, who identified and catalogued turtles in 1898, and Dr. L. W. Williams, who made the large model of the common squid in 1906.

The present Scientific Staff of this Department includes also three Honorary Curators: Professor William Morton Wheeler, Dr. Alexander Petrunkevitch, and Professor Aaron L. Treadwell.

Dr. Alexander Petrunkevitch, an authority on American spiders, became an Honorary Curator of Arachnida in 1909. Dr. Petrunkevitch has rendered valuable service to the Museum through correspondence, exchange, and the general enrichment of the collections.

Professor Aaron L. Treadwell, of Vassar College, was appointed Honorary Curator of Annulata in 1909.

Alexander
Petrunke-
vitch, Ph.D.
1909-
Aaron L.
Treadwell,
B.S., M.S.,
Ph.D.
1909-

FISHES, REPTILES, AND BATRACHIANS

UNTIL 1901, there were practically no batrachians and fishes on exhibition, and very few reptiles. Lack of space had made this necessary, and the accumulations of the preceding thirty years found storage room only. The collection of reptiles and batrachians up to this time consisted of specimens received from the Department of Parks and the Zoölogical Society, a number collected on Museum expeditions to Florida, Mexico, and Cuba, thirty-seven reptiles and batrachians from the Island of Trinidad, twenty-five from Utah, Wyoming, and Nebraska, and 110 collected in Sumatra. Fifty snakes, 40 lizards, and 125 embryos of loggerhead turtles, collected in Florida, were presented by Dr. Charles Stover Allen in 1893. In 1899 Colonel Nicholas Pike presented his large collection of reptiles and batrachians containing about 1,300, mostly from Long Island, New York.

The collection of fishes was very small, and consisted mainly of painted wax and plaster models, which resembled but slightly the fish in nature. Most of these were received in a collection purchased from the Smithsonian Institution in 1886 (\$727). It contained colored casts of eighteen species of fish and fourteen species of reptiles. A series of fishes collected by Professor Agassiz was presented by the Museum of Comparative Zoölogy, Cambridge, in 1876, and other specimens were received from time to time through the United States Fish Commission.

Fishes.

When the present Department of Invertebrate Zoölogy was established in 1901, the collections of fishes and reptiles were placed in its charge. Exhibition space was assigned for them, and efforts toward an attractive exhibition series were at once begun. All known methods of preserving and exhibiting fishes were unsatisfactory, so experiments along this line were begun, and have continued with

FISHES, REPTILES, AND BATRACHIANS

very satisfactory results. The present exhibition series of fishes comprises 125 casts, models, and mounted skins, together with about the same number of colored plates of the various families. To the New York Aquarium the Department is indebted for very many specimens, also to the United States Fish Commission. From the latter, twenty specimens—types and cotypes of new genera and species of fish from the Philippines—were received in 1903, and in 1904 a collection of 200 Hawaiian fish, besides various smaller collections received from time to time.

The exhibition series of reptiles numbers in specimens and groups: of turtles, 54; batrachians, 28; lizards and snakes, 62. About 150 specimens have been received from the Zoölogical Society, and over fifty from the Department of Parks.

Batrachians
and
Reptiles.

Four hundred and sixty batrachians, representing every species of the United States but one, were presented in 1905 by Miss Mary C. Dickerson. In 1907 eighty-two exotic lizards from various localities were given by Mr. A. Hermann; and thirty-eight reptiles and batrachians from Brazil were presented by Mr. Morris K. Jesup.

The expeditions sent out by other departments of the Museum have added many specimens to the study collections from Mexico, Porto Rico, Alaska, Patagonia, Fayûm Desert (Egypt), and Siberia. In 1906 an expedition sent to New Mexico and Arizona for reptiles returned with 1,000 specimens. Another trip to Colorado in 1908 yielded fifty-one specimens.

A new Department of Ichthyology and Herpetology was established in July, 1909, and Dr. Bashford Dean appointed its Curator.

CHIEF BENEFACTORS OF THE DEPARTMENT OF FISHES, REPTILES, AND BATRACHIANS

GIFTS TO THE VALUE OF \$500 OR MORE

Cleveland H. Dodge, Alessandro Fabbri,
Ernesto Fabbri.

MAMMALS AND BIRDS

SHORTLY after the Museum's Charter was granted, in 1869, the Trustees began the purchasing of collections, and by 1870 had secured the Elliot, the Maximilian, the Vedray, and Verreaux collections.

Maximilian
Collection,
\$7,500.

The most important was that of Prince Alexander Philipp Maximilian of Wied, which was purchased for £1,500 sterling. It consisted of 4,000 mounted birds, 600 mounted mammals, and about 2,000 fishes mounted and in alcohol. Prince Maximilian visited Brazil in 1815, 1816, and 1817, exploring it through ten degrees of latitude, and gathering specimens for his collection. He came to the United States in 1832, when little was known of the Far West, and as an experienced naturalist visited the region between the Rocky Mountains and the Mississippi. His collection, containing many types, was regarded as the most important in Europe.

Elliot
Collection
of Birds,
\$7,351.62

The Elliot Collection of Birds consisted chiefly of North American species and comprised over 2,500 specimens, and was purchased from Dr. Daniel Giraud Elliot for \$7,351.62.

Verreaux
Collection,
\$16,000.

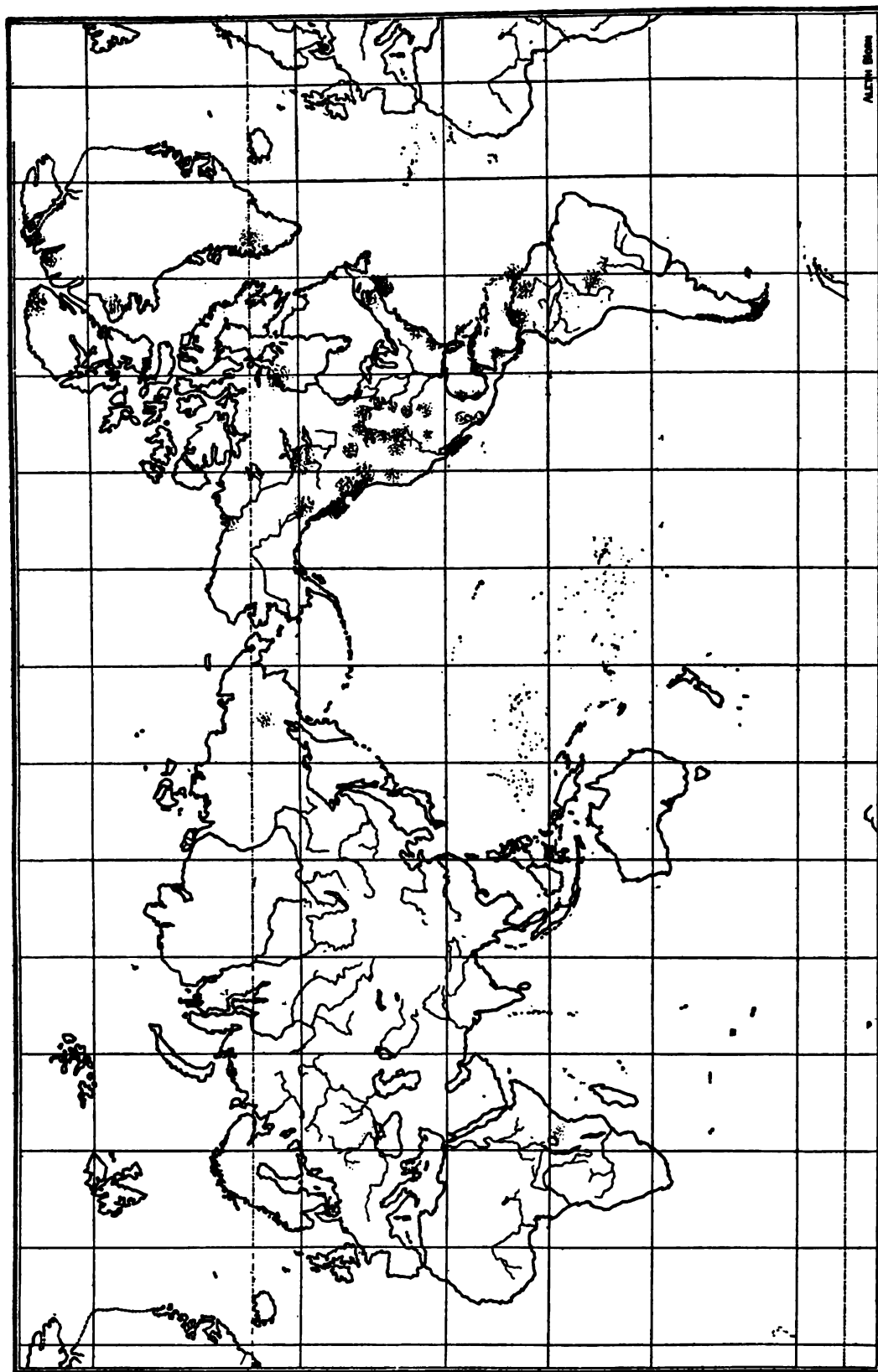
The Verreaux Collection, placed on the market because of the death of its owner, Edward Verreaux, of Paris, at that time the largest dealer in specimens in the world, was purchased for \$16,000. It comprised 220 mounted mammals, 2,800 mounted birds, and 400 skeletons of mammals, birds, reptiles, and fishes.

Vedray
Collection,
\$1,000.

Two hundred and fifty specimens of mounted mammals and Siberian birds were purchased from M. Vedray, also of Paris, for \$1,000.

North
Atlantic
Right Whale.

The skeleton of the North Atlantic right whale was one of the first gifts of importance received by the Trustees for the new Museum. This whale came ashore off Long Island, and the bones were purchased by the Honorable Peter Cooper for use in Cooper Union. They proved too cumbersome, however, and were stored in the basement until,



CHIEF EXPLORATION AREAS FOR MAMMALS AND BIRDS UP TO THE YEAR 1908.

MAMMALS AND BIRDS

upon the organization of the new Museum, they were presented to the Trustees by Mr. Cooper. The specimen was mounted in the Arsenal and first exhibited in 1883.

Before the mammals and birds were transferred from the Arsenal to the new building early in 1878, there were many additions, principally the mounted specimen of the extinct great auk, the gift of Mr. Robert L. Stuart in 1870, a collection of birds' nests given by the Smithsonian Institution in 1874, and 11,000 skins of North American birds presented in 1875 by Dr. Daniel G. Elliot.

After the new building (north wing) was opened, the collection of mammals and birds was constantly enlarged by various gifts.

Several mounted mammals, among them an elk, a moose, tapir, camel, and an ostrich, which had been exhibited at the Centennial Exhibition in Philadelphia, were purchased by a number of the Trustees and presented to the Museum in 1878. They were considered to represent the finest taxidermy of the time, and formed one of the chief attractions to the Museum in the early days.

Ward
Centennial
Collection,
\$1,896.

The first material for study collections was given by Dr. E. A. Mearns in 1882, consisting of skins and eggs of North American and European birds.

Beginning
of Study
Collections.

The gift of Mrs. Robert L. Stuart made possible the series of 37 groups showing the nesting habits of our native birds, the first of which were exhibited in 1887. The Museum is also indebted to Mrs. Stuart for the series of groups of the smaller species of mammals found within the vicinity of New York.

First Bird
Groups and
Mammal
Groups.

A valuable collection of humming birds, numbering 2,000 specimens and representing 400 species, was the gift of Dr. Daniel G. Elliot in 1887. That same year Dr. E. A. Mearns presented 2,235 specimens of birds collected in Arizona.

Elliot
Collection of
Humming
Birds.
Mearns
Collection.

The Snowden Howland Collection of Eggs of North American Birds, numbering 3,000, was the gift of Mr. Clarence King in 1889.

Snowden
Howland
Collection.

Another collection received in 1889 was that of a number of mammals and birds and a small collection of eggs and nests from South Africa, collected by Dr. B. N. Bridgman and presented by Mr. D.

Bridgman
Collection.

HISTORY OF THE MUSEUM

Willis James, Mr. Cornelius Vanderbilt, and Mr. Charles Smith. In 1890 about 440 bird skins and the skins and skulls of 55 mammals collected in Florida were given by Mr. W. E. D. Scott.

The five specimens in the habitat group of orang-outangs, collected in Borneo in 1878-81 by Mr. W. T. Hornaday, were presented to the Museum by Mr. Robert L. Colgate.

Mr. James A. Bailey was a frequent contributor to the department. A chimpanzee and a two-horned rhinoceros, as well as the skeleton of "Jumbo," all of which are on exhibition, were his gifts.

The skeleton of "Samson," an Asiatic elephant, was presented by Mr. W. W. Cole in 1887.

A collection of 2,500 bird skins from India was presented by Mr. James M. Constable and Mr. William E. Dodge in 1894.

Dutcher
Collection.

In 1895 the Linnæan Society of New York contributed the William Dutcher Collection of birds, containing about 2,000 specimens, most of which were collected in Long Island.

Through the coöperation of the Park Commission and the Zoölogical Society, the department has received many additions to its collection. "Tip," the Asiatic elephant received in 1894, the Indian rhinoceros, and the chimpanzee "Kitty," all on exhibition, are among those received from the Central Park Menagerie. Since January, 1904, the accessions from that source have numbered 272 mammals and 341 birds. During the same period 282 mammals and 41 birds were received from the Zoölogical Society. One of the best-known specimens is "Hannibal," the African lion, presented to the Zoölogical Park by Miss Carnegie, which was given to the Museum in 1905.

Cetaceans.

The development of the series of Cetaceans has been largely through the generosity of Mr. George S. Bowdoin. In 1907, through funds provided by him, three skeletons were purchased: Gray's whale, a bottle-nose whale, and a rare ziphioid whale, which proved to be a new species and was named in honor of Mr. Bowdoin. The Museum is also indebted to Mr. Bowdoin for the skeleton of the finback whale, and the model of the sulphur-bottom, which was prepared from photographs and measurements. The exhibition series also contains

MAMMALS AND BIRDS

models of the blackfish, harbor porpoises, and common dolphins. In the study series there are skulls and skeletons of the narwhal, and skulls of the white whale, collected by Commander Peary and presented by the Peary Arctic Club.

Two North Atlantic right whales, captured off Amagansett, Long Island, were obtained by Mr. Roy Chapman Andrews and Mr. James L. Clark in 1907. One of these whales was the largest specimen of which there has been definite scientific record. The sum paid for the two skeletons and a complete set of baleen was \$3,278, also the gift of Mr. Bowdoin.

Eight specimens of the fur seal for a group illustrating a seal rookery were presented to the department in 1908 by Mr. D. O. Mills. The specimens were collected at the Pribilof Islands, Alaska. North Pacific Seal Group.

Among recent gifts of special interest are the following:

The skins and skeletons of the rare *Solenodon paradoxus*, which were obtained in Haiti by Mr. A. H. Verrill and presented in 1907 by President Jesup; the small but valuable collection of mammals from the border of Tibet, received in 1908 through the generosity of the Honorable Mason Mitchell (the takin, mounted in 1909, was in this collection); the group of Paradise birds, numbering 75 specimens and containing 46 species, the gift of Mrs. Frank K. Sturgis.

MAMMAL AND BIRD COLLECTIONS BY PURCHASE

A number of important accessions to the department have been purchased by the Museum.

In 1882 two contracts were made with Professor H. A. Ward, of Rochester—one to supply mounted specimens of such mammals of North America north of Mexico as were necessary to complete the Museum's collections, not to exceed the value of \$8,000—the other to procure for the Museum specimens of all the monkeys in the world. Ward Collection, \$15,000. In the first four years following the drawing up of these contracts a large number of specimens was sent in, a few were delivered in 1888, and the last received in 1892. The funds for the first contract were

HISTORY OF THE MUSEUM

provided by Mr. Jesup personally, and for the second, which amounted to over \$7,000, by Mr. Robert Colgate.

**Bailey
Collection of
Nests and
Eggs, \$2,000.**

The H. B. Bailey Collection of nests and eggs, considered at that time one of the finest in the country, was purchased in 1885; \$1,500 of this was given by Mrs. Robert L. Stuart.

**H. H. Smith
Collections.**

A collection of 4,000 bird skins, several hundred eggs, and several hundred sterna, collected by Mr. Herbert H. Smith in Brazil, was purchased from him in 1887. On an expedition to South America in 1898-99 Mr. Smith was authorized to collect mammals for the Museum to the value of about \$3,000. In 1904-5, an additional 656 specimens of mammals, together with 714 birds, eggs, and nests, collected by Mr. Smith in Colombia, were purchased.

**Lawrence
Collection,
\$9,000.**

The Lawrence Collection of American Birds was purchased in 1887 for \$9,000 and added to the collections about 12,000 specimens, mostly from Mexico, Central America, South America, and the West Indies, containing 4,000 species and 300 original types. They were the result of the life work of the ornithologist, Mr. George N. Lawrence.

**Rusby
Collection.**

A collection of 400 Bolivian birds, containing several new to science, and collected by Dr. H. H. Rusby, was purchased in 1888.

**Sennett
Collection,
\$4,500.**

With the acquisition of the George B. Sennett Collection of birds in 1903, the study collection was increased to over 80,000 specimens. This collection contained about 8,000 birds, several hundred nests, and several thousand eggs, largely from Mexico and Texas.

**Price
Collection.**

The Price Collection of birds contained 3,918 specimens from California and Mexico, and was purchased in 1904.

An extensive series of Philippine birds, containing 1,000 specimens, was purchased in 1905.

In 1906 the department acquired 79 specimens of mammals from China, most of which had been heretofore unrepresented. In 1907 another collection from China, containing 55 specimens, was purchased.

MAMMALS AND BIRDS

EXPEDITIONS

In addition to the material acquired through gift and purchase, the various expeditions sent out in the interest of this department have procured many valuable specimens which have contributed to both the exhibition and the study series. The first organized expedition sent out from the Museum was the one from this Department in 1886, when Dr. Daniel G. Elliot and Mr. Jenness Richardson went to Montana in search of material for the Bison group.

Of the six specimens in the Moose group, completed in 1895, two were obtained on expeditions to Maine in 1888 and New Brunswick in 1884. One was presented by Mr. John L. Cox, and another by Dr. E. A. Mearns, while the other two were purchased.

The specimens for the Wapiti group, with the exception of the large male, were collected in the Olympic Mountains in Washington in 1900 by Mr. C. Lincoln Free. This group was completed in 1906.

The Collared Peccary group, mounted in 1905, was obtained in Sinaloa, Mexico, by Mr. J. H. Batty on his expedition in 1902. On the same expedition he also collected the material for the California mule-deer group, which was mounted in 1905.

Grant's caribou was discovered by Mr. Andrew J. Stone on an expedition to Alaska and British Columbia in 1901-3. The specimens for this group, completed in 1902, were obtained in the extreme western end of the Alaskan peninsula. This expedition also provided the specimens for the Dall sheep group, completed in 1909, as well as a large and important collection of other mammals. Especially noteworthy are the series of the golden lemming, Osborn caribou, and the Stone sheep, both of the latter being species new to science.

Through the expeditions of this department a fine series of mammals, both large and small, were received in addition to material for the groups mentioned above.

A large collection of mammals from Arctic America was brought back by Captain George Comer in 1902, and comprised, besides a

HISTORY OF THE MUSEUM

number of small mammals, specimens of the Barren Ground caribou, musk ox, and a few bearded seals.

On an expedition to Central and Southern Mexico in 1902, under Mr. J. H. Batty, an extensive collection of mammals and birds was obtained.

The mammals collected in Eastern Siberia during 1900 and 1901 by the Jesup North Pacific Expedition numbered over 500 specimens, representing 30 species, about one-third of which proved new to science.

Through the Tjäder Expedition to British East Africa in 1906 and 1907, about 450 specimens of mammals and birds were received, among which were a number of Grant zebras.

Through the Peary Arctic Club the Museum has acquired a large number of mammals and birds collected by Commander Peary on his expeditions to the Far North. Among the specimens brought back on one of the earlier expeditions were the musk oxen, now mounted in a habitat group. These were collected on Bache Peninsula in October, 1908. About 100 specimens, among them an especially fine polar bear, were received when Commander Peary returned in 1902.

The material brought back in 1906 added a large number of specimens to the collections from the Far North, the most important being a herd of a new species of white caribou (the Peary caribou) and nearly 70 specimens of musk oxen.

The latest and largest addition to the Arctic mammal series was received when Commander Peary returned from his expedition of 1908 and 1909. It contained about 250 specimens, among them a very large series of musk oxen and Peary caribou.

Habitat
Groups of
North
American
Birds.

One of the unique features of the Department's collection of birds is the series of habitat groups of North American birds which have recently been completed. These groups not only depict typical bird life of North America, but the backgrounds painted from nature also show typical American scenery. To bring together the material for this exhibit, many expeditions have been sent into the field during the last fifteen years, under the direction of Curator Chapman, who has traveled more than 65,000 miles to secure the necessary data.

MAMMALS AND BIRDS

For these groups the Museum is directly indebted to Mr. John L. Cadwalader, Mrs. Morris K. Jesup, Mrs. Philip Schuyler, Mrs. John B. Trevor, Mrs. Robert Winthrop, Mr. F. Augustus Schermerhorn, Mr. H. B. Hollins, Mr. Henry Clay Pierce, Mr. Henry W. Poor, Mr. Courtney Brandreth, Mr. James C. Carter, Mr. Charles Lanier, and Miss Caroline L. Morgan, to whose subscriptions an equal sum has been added from the funds of the Museum.

SCIENTIFIC STAFF

As Superintendent of the Museum, Professor A. S. Bickmore had general charge of the mammals and birds during the early development of this department. In 1872 Dr. J. B. Holder was appointed a general assistant to Professor Bickmore and devoted his attention to the zoölogical collections. He was made Curator of Zoölogy in 1881. In 1885 the Department of Zoölogy was divided into two departments—that of Mammals and Birds, and Marine Zoölogy. Dr. Holder was Curator of the latter, which position he held until his death in 1888, having been in the service of the Museum for seventeen years. Dr. Holder was an associate of Professor Agassiz and Professor Baird and had made important investigation on the fauna of New England waters and later in Florida. He was a voluminous writer, and made many important contributions to science.

Professor
A. S. Bick-
more, 1869.

Dr. J. B.
Holder,
1872-1888.

In 1885 Dr. J. A. Allen was made Curator of the Department of Mammals and Birds. Dr. Allen had studied under Agassiz, and served as an assistant in ornithology in the Museum of Comparative Zoölogy at Harvard. He had already become an authority in several lines of research. When Dr. Allen assumed charge of the Department, the collection of mammals numbered not far from 1,000 mounted skins, and about 300 mounted skeletons. The collection of birds numbered about 10,000 mounted specimens, and about 300 unmounted skins, besides several hundred mounted skeletons. Through Dr. Allen's efforts the Department of Taxidermy was established in 1886. He also started the first study collections, which a year after his appointment numbered 6,000 skins of birds, and from his department also the first

Dr. J. A.
Allen,
1885-

HISTORY OF THE MUSEUM

expedition organized for collecting and exploring was sent out. Under his guidance this department has had continuous growth, and at the present time the collections comprise more than 30,000 mammals and 90,000 birds in the exhibition and study series. Dr. Allen is recognized as one of the foremost authorities on mammals and birds, and his numerous contributions to systematic zoölogy are widely recognized as of the highest merit. Besides carrying on his numerous researches, in recent years he has devoted much of his time to editing the scientific publications of the Museum.

Mr. F. M.
Chapman,
1888-

In 1888 Mr. Frank M. Chapman was appointed Assistant Curator in this Department. His attention has been given primarily to ornithology, in which branch of zoölogy he has attained preëminence. It is in a large measure through his untiring energy and careful field work that the Museum is indebted for the effectiveness of its bird groups, which competent observers have declared to be second to none.

Mr. R. C.
Andrews,
1907-

Mr. W. De W.
Miller,
1903-

At the present time the Scientific Staff of this department includes Mr. Roy Chapman Andrews, Assistant in Mammalogy, and Mr. W. De W. Miller, Assistant in Ornithology.

Advisers
and
Specialists.

From time to time the Museum has availed itself of the services and advice of scientists who have specialized in particular groups of the mammals and birds, for the proper identification, classification, and installation of the material. Foremost among these should be mentioned Dr. Daniel Giraud Elliot, who served as scientific adviser to the Trustees in the purchase of the first collections secured. It was on his recommendation that the Verreaux and Vedray collections were acquired. A few of the others who have assisted in the development of the collection of mammals and birds are: Dr. Edgar A. Mearns, U. S. A., who in 1883 identified, labeled, and catalogued a large collection of European birds; Dr. A. K. Fisher and Dr. J. Dwight, Jr., who in 1885 gratuitously labeled and catalogued the Elliot collection of birds, and Mr. E. G. Lewis, who gave gratuitous service in the Department of Ornithology in 1888.

MAMMALS AND BIRDS

CHIEF BENEFACTORS OF THE DEPARTMENT OF MAMMALS AND BIRDS

GIFTS TO THE VALUE OF \$500 OR MORE

| | |
|-------------------------------|------------------------------|
| James A. Bailey, | Morris K. Jesup, |
| P. T. Barnum, | Mrs. Morris K. Jesup, |
| J. H. Batty, | Clarence King, |
| George S. Bowdoin, | Linnæan Society of New York, |
| Courtney Brandreth, | Edgar A. Mearns, |
| John L. Cadwalader, | D. O. Mills, |
| James C. Carter, | Hon. Mason Mitchell, |
| W. W. Cole, | New York Zoölogical Society, |
| Robert Colgate, | Peary Arctic Club, |
| James M. Constable, | Henry Clay Pierce, |
| Peter Cooper, | Henry W. Poor, |
| Department of Parks, New York | F. Augustus Schermerhorn, |
| City, | Mrs. Philip Schuyler, |
| Rev. D. Stuart Dodge, | George B. Sennett, |
| William E. Dodge, | Mrs. Robert L. Stuart, |
| William Dutcher, | Mrs. Frank K. Sturgis, |
| Daniel G. Elliot, | Miss Phebe Anna Thorne, |
| Madison Grant, | Samuel Thorne, |
| H. B. Hollins, | Mrs. John B. Trevor, |
| D. Willis James, | Mrs. Robert Winthrop. |

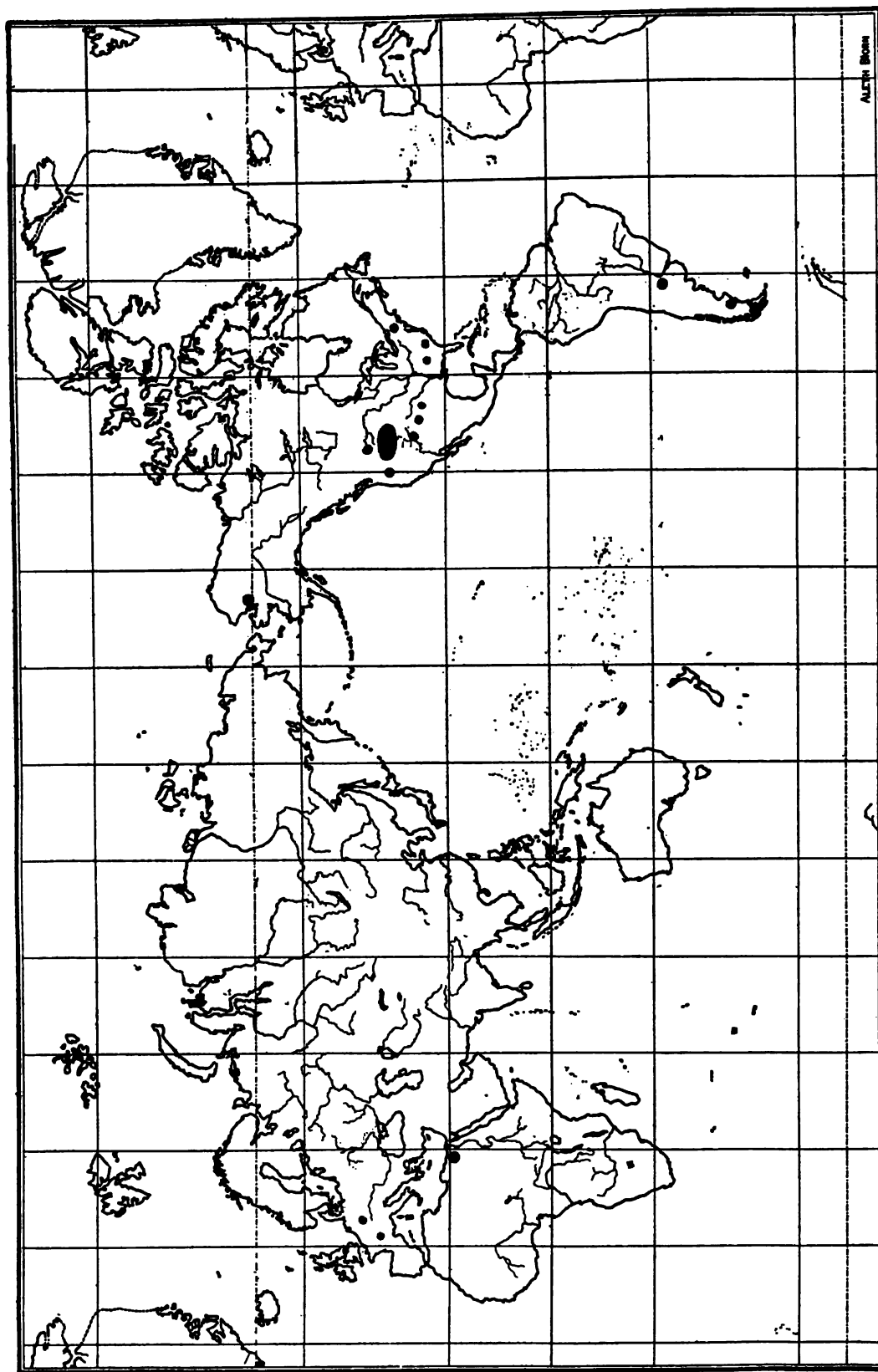
FOSSIL VERTEBRATES

THE Department of Vertebrate Palæontology was established by President Jesup in May, 1891, with Professor Henry Fairfield Osborn as Curator.

Plan

The plan of the department, as outlined by Professor Osborn in the Annual Report for 1892, was to form *representative series from the successive horizons of the West*, in order to present a *historical development of the Evolution of the Mammals in North America*. It was expanded subsequently to cover the evolution of the vertebrata in general, but its chief aim, and since 1909 its specified limitation, has been to present the *Evolution of the Land Vertebrates, primarily of North America*, but incidentally of other parts of the world.

These plans have met with a substantial success that places this department among the foremost in the world in this branch of science, not merely in the size of its collections, but in their quality, and in the high standards of scientific accuracy, thoroughness, and artistic excellence maintained in all its work. The generous support received from Trustees and friends of the Museum and the interest and appreciation shown by the people of New York have warranted expanding the original plans to a much larger scale than at first contemplated. Where eighteen years ago a single hall seemed adequate to present the evolution of the mammalian life of North America, the exhibits already require three times this space; and we look forward to presenting the broad succession of vertebrate life of land and sea, from its inception far back toward the beginnings of the geological record, down to its culmination in the appearance of man, in a succession of halls corresponding to the great periods of geology. The materials for this larger plan are rapidly accumulating, and will be prepared for a splendid presentation before the space is available for their exhibition.



CHIEF LOCALITIES OF FOSSIL VERTEBRATES IN AMERICAN MUSEUM COLLECTIONS OBTAINED BY MUSEUM EXPEDITIONS, GIFTS,
EXCHANGE OR PURCHASE.

FOSSIL VERTEBRATES

COLLECTIONS

The collections in this department are mainly from three sources, namely, Expeditions, Exchange, Purchase.

First, and most important, are the collections brought in year by year by expeditions sent out by the Museum to explore various fossil-bearing horizons in the United States and other parts of the world. Fifty-two expeditions have been sent out in this department between the years 1891 and 1909 inclusive, at a total cost of upward of \$110,000. The expense of these expeditions is borne partly by the General Endowment Fund provided by the Trustees, partly by the special annual fund of \$2,000 provided by Professor Henry Fairfield Osborn, and in some instances by funds for special explorations which have been provided by the late President Jesup, by Mrs. Jesup, by the late William C. Whitney, by Messrs. Percy R. Pyne, J. P. Morgan, Jr., Frank K. Sturgis, Henry Fairfield Osborn, and George J. Gould. More than half of the collections, both in number and value, have been obtained through Museum expeditions.

Collections
by
Expeditions.

FIELD EXPLORATIONS.—Beginning in 1891, the various geological horizons and countries have been explored in the following seasons:

- Permian, Texas, 1902, 1906, 1908.
- Triassic, North Carolina, 1894, 1895.
- Upper Jurassic, Wyoming, 1897–1905; Montana, 1903.
- Marine Cretaceous, Kansas, 1897; S. Dakota, 1903.
- “Laramie” Cretaceous, Wyoming, 1892, 1900; Montana, 1902–9.
- Judith River Cretaceous, Montana.
- Paleocene (Puerco and Torrejon), New Mexico, 1892, 1896.
- Lower Eocene (Wasatch), Wyoming, 1891, 1896; New Mexico, 1896.
- Lower Eocene (Wind River), Wyoming, 1891, 1896, 1905, 1909.
- Eocene (Huerfano), Colorado, 1897.
- Middle Eocene (Bridger), Wyoming, 1893, 1903–6, 1909.
- Middle Eocene (Washakie), Wyoming, 1893, 1895, 1908.
- Upper Eocene (Uinta), Utah, 1894, 1895; Wyoming, 1909.
- Oligocene (Fayûm), Egypt, 1907–9.

HISTORY OF THE MUSEUM

Oligocene (White River), South Dakota, 1892, 1894, 1902.

Oligocene (White River), Colorado, 1898, 1901.

Oligocene (White River), Montana, 1902; Wyoming, 1909.

Miocene, Montana, 1902.

Miocene (Santa Cruz), Patagonia, 1899.

Lower Miocene, S. Dakota, 1905-7; Nebraska, 1907-8.

Middle Miocene, Colorado, 1898, 1901-2; Nebraska, 1908.

Upper Miocene, S. Dakota, 1894, 1902-3; Kansas, 1898.

Upper Miocene, Texas, 1899-1901.

Lower Pliocene, Nebraska, 1908.

Middle Pliocene, Texas, 1899-1900.

Lower Pleistocene, Nebraska, 1893, 1897; Texas, 1899-1901.

Lower Pleistocene, Arkansas, 1903-4; Alaska, 1907-8.

Hall
Collection.

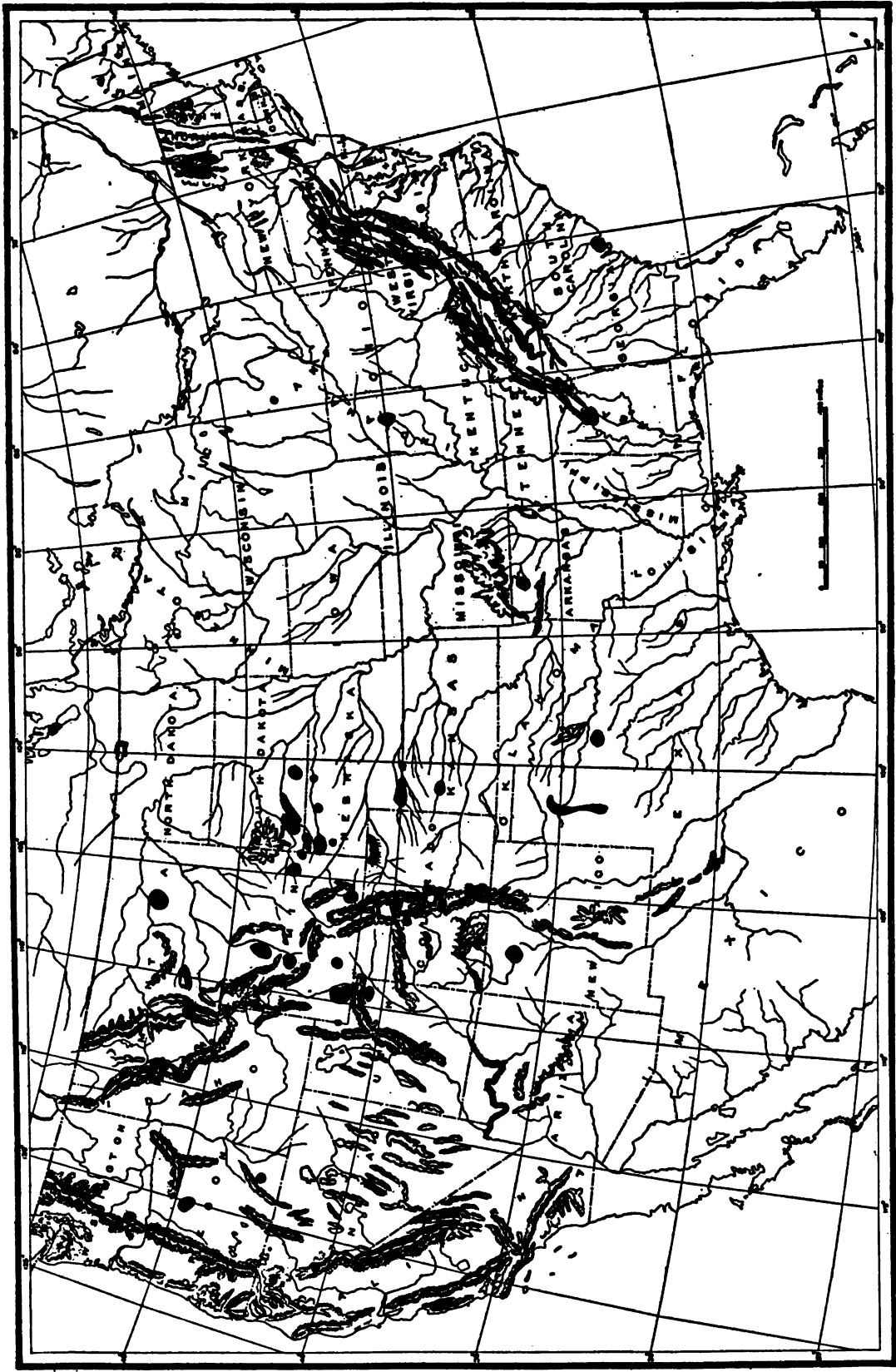
Second, but first in point of time, is the collection of vertebrate fossils obtained by Messrs. White and Meek for Professor Hall and purchased with the rest of the Hall Collection for the Museum by the Trustees in 1878.

Cope
Collection
of Fossil
Mammals.

Third, the collection of North American Fossil Mammals brought together by Professor E. D. Cope between 1872 and 1890, and purchased for \$32,000 by subscription of Mr. Morris K. Jesup, Mrs. William H. Osborn, Messrs. Henry Fairfield Osborn, W. E. Dodge, J. Pierpont Morgan, James M. Constable, Theodore A. Havemeyer, D. Willis James, John D. Crimmins, Cornelius Vanderbilt, Adrian Iselin, Charles Lanier, Frederic E. Church, and an unnamed friend of the Museum. In this collection of about 7,000 specimens, is included a great number of skeletons and skulls of extinct mammals of the American Tertiary formations, some of them unique, and all of great value in illustrating the history and evolution of the mammalia in North America.

Cope
Pampean
Collection.

Fourth, the Cope Pampean Collection, obtained in the Pampean Formation of the Argentine Republic by Messrs. Ameghino, Larroque, and Brachet, exhibited at the Paris Exposition of 1878, and purchased by Professor Cope. It was purchased from his estate for the



CHIEF LOCALITIES OF FOSSIL VERTEBRATES IN THE AMERICAN MUSEUM COLLECTIONS.

FOSSIL VERTEBRATES

Museum at a cost of \$10,000 in 1899 by Messrs. Havemeyer, Dodge, James, Iselin, Constable, and Osborn, Trustees of the Museum. This collection contains a fine series of skeletons of ground-sloths, glyptodons, saber-tooth tiger, and other extinct South American mammals, of high exhibition value.

Fifth, the Cope Collection of Fossil Reptiles, Amphibians, and Fishes of North America, presented to the Museum in 1902 by President Jesup at a cost of \$20,000. It includes magnificent skeletons of the amphibious, carnivorous, and duck-billed dinosaurs, a splendid series of the ancient reptiles and amphibians of the Permian Period, and other specimens of high scientific and exhibition value.

Cope
Collection of
Fossil
Reptiles, etc.

Sixth, the Whitney Collections of Fossil and Recent Horses, obtained and prepared in 1901-3 by Western expeditions sustained through a special fund of \$15,000 provided by the late William C. Whitney. This includes a splendid series of skeletons, skulls, etc., of extinct and living horses, illustrating the Evolution of the Horse in Nature and under Domestication. This exhibit has since been much expanded and improved by specimens presented or through funds provided by Messrs. Randolph Huntington, James R. Keene, Frank K. Sturgis, George J. Gould, Arthur Curtiss James, Percy R. Pyne, Francis R. Appleton, and Henry F. Osborn.

Whitney
Horse
Collection.

Seventh, the Warren Collection, brought together by Professor J. Collins Warren of Harvard University in 1840-55, and purchased for the Museum from his heirs by J. Pierpont Morgan in 1906 at a cost of \$30,000. It includes the famous Warren Mastodon, the most perfect skeleton of an extinct elephant ever discovered; also a skeleton of the extinct cetacean *Zeuglodon*, a collection of Dinosaur footprints, and other valuable specimens.

Warren
Collection.

Eighth, various choice specimens of fossil vertebrates from Kansas, Wyoming, and Texas, purchased from Mr. Charles H. Sternberg and presented by Mrs. Morris K. Jesup, Mr. Charles Lanier, and others, or purchased through general endowment funds. The most remarkable of these specimens are the mummified skeleton of a duck-billed dinosaur, a fine skull of the horned dinosaur, a skeleton of the great

Sternberg
Collections.

HISTORY OF THE MUSEUM

Cretaceous fish, *Portheus*, and of the toothed bird *Hesperornis*. Their aggregate cost is \$5,787.

Ichthyosaur Skeletons.

Ninth, a skeleton of *Ichthyosaurus* with the outlines of the body preserved, from Holzmaden, Württemberg, purchased for \$1,000 and presented by Mrs. Jesup in 1908. Three other fine skeletons of the same species have also been purchased.

Exchange Collections.

Tenth, specimens and collections of fossil vertebrates received in exchange from various European and other foreign museums in 1896 to 1909, notably those of London, Paris, Munich, Stuttgart, Tübingen. Basle, Leipzig, Darmstadt, Lyons, Christiania, Bucharest, Buenos Ayres, Adelaide, and in the United States with the Yale, Princeton, University of Kansas, University of California, and other museums. The most important fossils received in this way are skeletons of *Ichthyosaurus* (with seven young), *Pterodactylus*, *Ophthalmosaurus*, *Cryptoclidus*, saber-tooth tiger, giant wolf, and casts of skeletons of *Hippidium*, *Macrauchenia*, *Halitherium*, etc. Estimated value, \$6,000.

Miscellaneous Gifts and Purchases.

In addition to these collections are miscellaneous minor gifts and purchases of an aggregate value of probably \$5,000.

Value of Collections.

The aggregate cost of the collections in this department, not including the cost of preparation, is as follows, so far as obtainable from the records of the Department:

| | |
|--|-----------|
| Field expeditions..... | \$110,000 |
| Cope collections { | 32,000 |
| { | 20,000 |
| { | 10,000 |
| Whitney Collections (including preparation)..... | 15,000 |
| Warren Collection..... | 30,000 |
| Sternberg Collections..... | 5,787 |
| Exchange Collections..... | 6,000 |
| Miscellaneous..... | 5,000 |
| | <hr/> |
| | \$233,787 |

If to these should be added the cost of preparation of the specimens (which has in past years been largely carried on endowment

FOSSIL VERTEBRATES

funds), the present value of the collections would be between four and five hundred thousand dollars, and the expenditures of the Trustees thereupon would amount to about \$300,000.

SUMMARY

The total number of catalogued specimens is over 18,000, of which 14,000 are mammals. These specimens, it is estimated, represent about 2,000 distinct species. They include an exceptionally large number of type specimens and casts of types. There are 403 original type specimens of valid species of fossil mammals from the North American Tertiary formations; the total number of type specimens (originals and casts) of fossil vertebrata is estimated at over one thousand.

The collections include forty-nine complete mounted skeletons of extinct mammals, twenty-four of extinct reptiles and amphibians, and one extinct bird. There are in addition many complete or nearly complete skeletons which have not yet been mounted for exhibition, many hundreds of skulls of extinct vertebrates, and thousands of jaws, feet, or other portions of skeletons, only a small part of which (some two thousand specimens) are placed on exhibition.

Summary of
Collections.

SCIENTIFIC STAFF

The scientific staff of the department at its organization consisted of Professor Henry Fairfield Osborn, Curator, Dr. Jacob L. Wortman, Assistant Curator, and Mr. Charles Earle, Assistant. Professor Osborn has contributed his services to the Museum for fifteen years without salary. Mr. Earle remained with the department until 1894.

In 1895 the Cope Collection of Fossil Mammals was presented by a number of the Trustees, and Dr. W. D. Matthew was engaged in connection with its cataloguing and arrangement. In 1899 Dr. Wortman resigned his position with the American Museum to take charge of vertebrate palæontology in the Carnegie Museum, and Dr.

W. D.
Matthew,
1895-

HISTORY OF THE MUSEUM

Matthew was appointed Assistant and subsequently Associate Curator in Dr. Wortman's place.

O. P. Hay,
1900-1907

In 1900 Dr. O. P. Hay joined the staff as Assistant Curator, subsequently as Associate Curator of Chelonia in connection with the cataloguing of the Cope Collection of Fossil Reptilia, and from 1904-7 took especial charge of the arrangement and exhibition of the collections of extinct chelonians, while engaged upon his monograph upon this order of reptiles.

Bashford
Dean,
1903-

In 1903 Dr. Bashford Dean was appointed Honorary Curator of Fossil Fishes, and in 1909 the living and fossil fishes were transferred to a distinct department under his charge.

Field Staff.

The field work of the department was at first in charge of Dr. J. L. Wortman assisted by Mr. O. A. Peterson and others. Since 1898 Professor Osborn has exercised a general supervision over all field exploration, and he took personal charge of the Fayûm Expedition in 1907. The various expeditions in the Western States and elsewhere have been conducted by Messrs. Barnum Brown, Walter Granger, W. D. Matthew, J. W. Gidley, Albert Thomson, E. C. Case, Charles H. Sternberg, and L. S. Quackenbush, assisted by Messrs. Peter Kaisen, George Olsen, Paul Miller, F. B. Loomis, R. S. Lull, Handel T. Martin, H. W. Menke, William Stein, W. J. Sinclair, Roy L. Moodie, Harold J. Cook, Charles S. Mead, W. K. Gregory, A. E. Anderson, G. R. Wieland, J. D. Irving, Norman Grant, C. Forster Cooper, D. D. Streeter, and others.

Museum
Staff.

Since 1893 the laboratory work has been in charge of Mr. Adam Hermann, who has introduced and improved year by year the careful and skilful methods of preparation first employed by Professor Marsh. Under his training has grown up a staff of expert laboratory assistants.

Mr. W. K. Gregory joined the staff in 1900 as research assistant. Mr. A. E. Anderson as Department photographer, Albert Thomson in field photography, Erwin Christman, Mrs. L. M. Sterling, and Miss Helen Cox in illustration have also contributed to the success of the department.

In 1895 Mr. Charles R. Knight commenced a series of restorations

FOSSIL VERTEBRATES

of extinct animals executed for the Museum under the direction of Professor Osborn and provided for by Mr. J. Pierpont Morgan. These restorations have been a most successful and generally attractive phase of the work of the Department.

Since 1902 Mr. S. H. Chubb has been engaged, in connection with the evolution of the horse studies, in the collection and preparation of the material illustrating the osteology of the modern horse. A splendid series of mounted skeletons and preparations of skulls are the result of the work.

The collections of the Department afford unsurpassed opportunities for research in this branch of science. Many preliminary and a few monographic studies have been completed and others are in progress. The published studies include two volumes of *Memoirs* (Vols. I and IX) and 119 articles in the *American Museum BULLETIN* from 1892 to 1909, besides miscellaneous articles in other publications, by Professor H. F. Osborn, Professor Bashford Dean, Dr. J. L. Wortman, Dr. O. P. Hay, Dr. W. D. Matthew, Mr. Barnum Brown, Mr. Walter Granger, Mr. J. W. Gidley, Dr. L. Hussakof, Mr. Charles Earle, and Mr. W. K. Gregory of the Museum Staff, and Dr. F. B. Loomis, Dr. J. H. McGregor, Dr. E. C. Case, Mr. Earl Douglass, and Dr. W. J. Sinclair. Research.

CHIEF BENEFACTORS OF THE DEPARTMENT OF VERTEBRATE PALÆONTOLOGY

GIFTS TO THE VALUE OF \$500 OR MORE

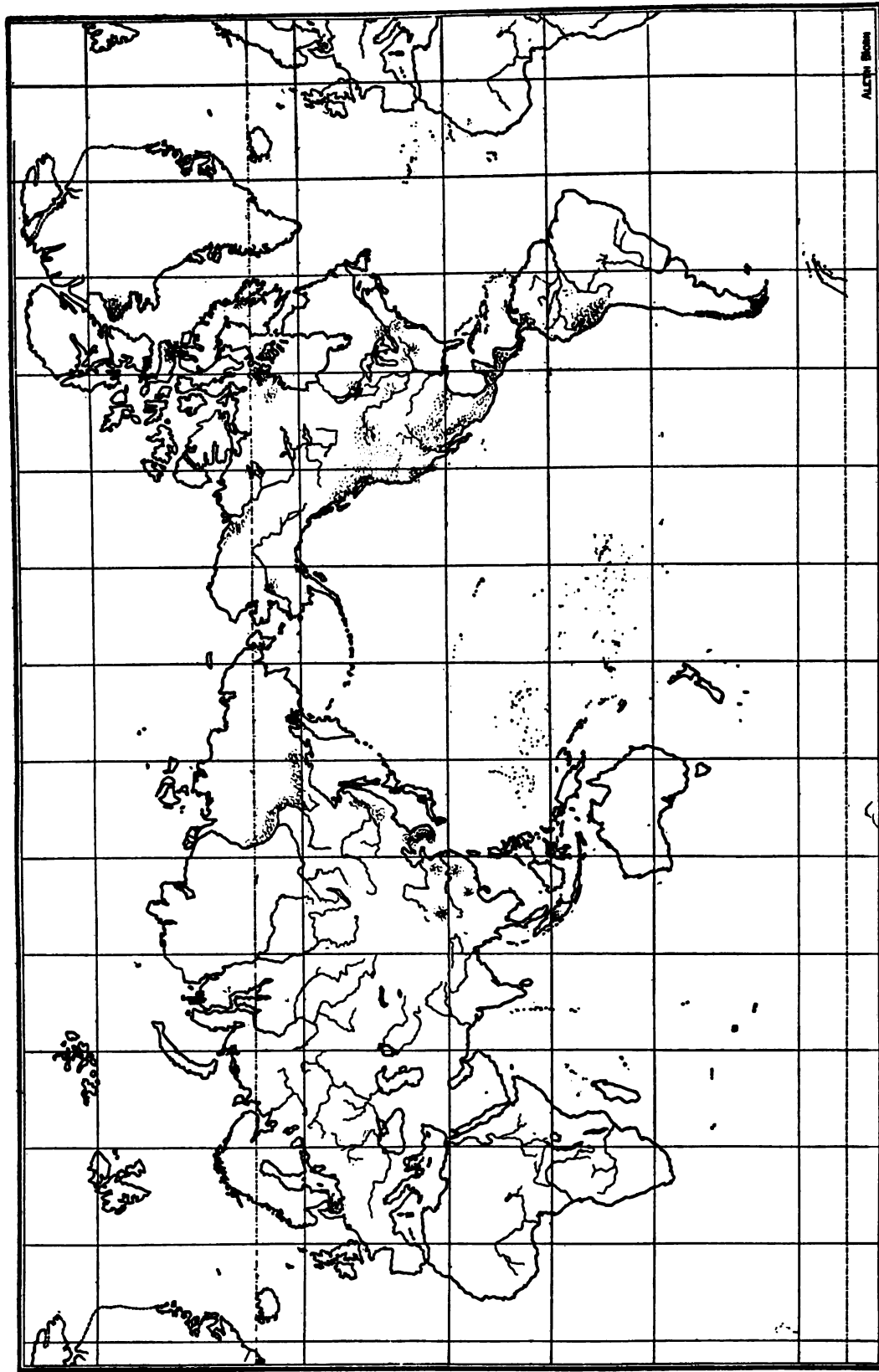
Francis R. Appleton,
Frederic E. Church,
James M. Constable,
John Daniel Crimmins,
Cleveland Hoadley Dodge,
William Earl Dodge,
George Jay Gould,

Edward Henry Harriman,
Henry Osborne Havemeyer,
Theodore A. Havemeyer,
Randolph Huntington,
Adrian Iselin,
Arthur Curtiss James,
Daniel Willis James,

HISTORY OF THE MUSEUM

Morris Ketchum Jesup,
Mrs. Morris Ketchum Jesup,
James Robert Keene,
Charles Lanier,
John Pierpont Morgan,
John Pierpont Morgan, Jr.,
Henry Fairfield Osborn,

William Henry Osborn,
Mrs. William Henry Osborn,
Percy Rivington Pyne,
Mrs. Robert L. Stuart,
Frank Knight Sturgis,
Cornelius Vanderbilt,
William Collins Whitney.



CHIEF AREAS OF EXPLORATION IN ANTHROPOLOGY TO THE CLOSE OF THE YEAR 1909.

ALLEN BROWN

ANTHROPOLOGY

THE Department of Anthropology was formed in 1873. It received a fresh impetus through the appointment of Professor F. W. Putnam as Curator in 1895. Its collections increased so rapidly—by purchase and donation alike—that until the west wing was ready, the question of exhibition and storage room was a most serious problem.

Miscellaneous archaeological material, especially Indian implements, had been received from the very beginning of the Museum's history, but the first accession of importance was a collection of rare implements made by the aborigines of Porto Rico, purchased and presented by the Trustees in 1873. The following year the E. H. Davis Archaeological Collection, containing many typical and rare forms of prehistoric workmanship from the mounds of Ohio, was purchased.

Porto Rican
Collection,
\$805.
E. H. Davis
Collection,
\$1,800.

The collection of rare antiquities gathered by Hon. E. G. Squier during his several years' search in Central and South America was acquired by purchase in 1875.

Squier
Collection,
\$2,000.

In 1878 over 200 pieces of Missouri mound pottery were received as a gift from Mr. H. G. Marquand; a very important collection containing 3,000 implements used by the prehistoric men of the valley of the Somme, France, was purchased and presented by the President, Mr. R. L. Stuart; and by purchase the Museum acquired the Bement Collection illustrating the Stone Age of Denmark.

Marquand
Collection.

Stuart
Collection.

Bement
Collection,
\$450.

The next large collection acquired was that gathered by Colonel Charles Jones among the Indians of the southern United States. It represented their art, religion, and industries. Two thirds of this collection was purchased by the Museum in 1877, the remainder being presented by Mr. Robert L. Stuart in 1881.

Jones
Collection,
\$7,500.

All of these were the collections which comprised the Department

HISTORY OF THE MUSEUM

of Anthropology in the early part of 1877, when the material was being removed from the Arsenal.

Collections
Exhibited
when the
Building was
Opened.

The collections exhibited when the new building was opened on December 22, 1877, besides those brought from the Arsenal, included the following: a series of stone implements of Ireland, presented by Mr. T. W. U. Robinson; three cases of stone and bronze implements and pottery from the Swiss Lakes, and bones and stone implements from the Dordogne Caves of southern France, deposited by Mr. G. L. Feuardent; Indian and Eskimo dresses and implements from Hudson Bay, the gift of Mr. Hugh Auchincloss. The collection gathered by Mr. A. W. Sturgis illustrating the island life of the Pacific and Indian oceans was also exhibited. This was on deposit only, but was finally (in 1891) purchased for the Museum by the Trustees. This collection, which surpassed all the combined public collections of this class in the country, contained 2,200 specimens illustrative of the arts, customs, dress, ornaments, and weapons of the people of the Hervey Islands, Mangara, Samoa, and Solomon Islands.

Sturgis
Collection,
\$39,001.

Terry
Collection,
\$29,744.

In 1880, Mr. James Terry also deposited with the Museum the great collection, comprising nearly 26,000 catalogued specimens, which he had obtained during his extended researches. This was purchased by the Museum in 1891. The collection, while especially rich in material pertaining to the native races of the west coast of North America, between Mexico and British Columbia, contained over 500 vessels of great ethnological interest from the Mississippi Valley; stone pipes and implements from Tennessee; copper weapons from Wisconsin; 2,500 specimens from Long Island, Westchester County, and Staten Island, and many objects from Maine, Connecticut, and northern New York; also sculptures of great antiquity from the Columbia River Valley. The large series of archæological material from California is especially important, since it illustrates the prehistoric culture condition of the Indians of Southern California more completely than any other. The collection also embraces interesting objects from Alaska and the South Seas.

Another valuable archæological collection brought to the Museum

ANTHROPOLOGY

at about this time was that of Mr. Andrew Ellicott Douglas. It numbered 23,000 specimens, arranged to show synoptically the various types occurring in North America. Mr. Douglas donated his entire collection to the Museum in 1901.

Andrew
Ellicott
Douglas
Collection.

In 1882 Mr. Heber R. Bishop presented a valuable collection illustrating the ethnology of British Columbia, gathered at his expense by Dr. J. W. Powell, Superintendent of Indian Affairs in that Province. It contained costly dresses, implements, carvings, etc. The large Haida canoe from the Bella Bella Indians, on exhibition at the Museum, was received in this collection.

Bishop
Collection.

The collection of Lieut. G. T. Emmons, U. S. N., was presented to the Museum by the Trustees in 1888. It contained nearly 1,300 specimens illustrating the ethnology of Alaska. Each specimen was obtained by Lieutenant Emmons himself and was accompanied by records and full notes regarding the use made of each object by the natives.

Emmons
First
Collection,
\$12,000.

This collection was supplemented in 1894 by the "Emmons Second Collection," numbering 2,966 specimens, among them about 500 from the Bering Sea and Siberia.

Emmons
Second
Collection,
\$25,000.

The Department of Anthropology was reorganized in 1894, "in order to illustrate the history of man in the same way as we are showing the history of animal life." The Emmons and Bishop collections, together with those of Sturgis and Terry, formed the most complete collection of anthropological material in this country. The development of the Department, however, had been somewhat neglected, for Professor Bickmore, who was nominally in charge of it, had been engaged in the development of the Department of Public Instruction since early in the eighties.

In 1894 the exhibition collection relating to man was confined to what is now the "Shell Hall" on the fifth floor, and the western half of the Bird Gallery on the third floor. There had been no systematic explorations, no scientific publications. The Department has grown until at the present time the collections overflow eight large exhibition halls and twenty-five storage rooms, and the scientific publications fill a

HISTORY OF THE MUSEUM

Jesup North
Pacific
Expedition,
1897-1903,
\$60,070.

score of volumes. Its growth is largely due to the many expeditions which have carried on research work throughout America and parts of Asia. First among these is the Jesup North Pacific Expedition, which was organized by Mr. Morris K. Jesup, in 1897. Mr. Jesup provided the means for a thorough investigation of the tribes of the North Pacific coast of America and Asia, to determine their early relations with each other. Between 1897 and 1903 a number of expeditions were sent into the field, and the tribes of the North Pacific coast, beginning in the west with the Amur River in Siberia, including the various native tribes between the Sea of Okhotsk and the Arctic Sea, and the peoples of Alaska, British Columbia, and Washington were investigated. The collections brought home by the eleven collectors make up a very considerable portion of the ethnological collection of the Department. The scientific results are extensive, and important contributions to our knowledge of these tribes have been published in the "Memoirs" of the Museum. The publications, which will fill twelve volumes, were also provided for by Mr. Jesup.

Publications
Jesup North
Pacific
Expedition,
\$25,000.

The following summary gives by locality the principal collections which the Museum now possesses:

NORTH AMERICA

ARCHÆOLOGY

The accession of the Terry Collection of 26,000 specimens, the Douglas Collection of 23,000, together with the Davis and Jones Collections, and other smaller ones, provided excellent general archæological material from several localities, but it did not represent the archæology of any definite area exhaustively, so one of the first undertakings was to send collectors to carry on researches in a few typical fields.

New York
State.

Archæological investigations in New York State—more particularly in the vicinity of New York City—were begun in 1895 and carried on for a number of years. Much of the expense of this work was

ANTHROPOLOGY

defrayed by friends of the Museum: Mr. Theodore Cooper provided the funds for the explorations at Pelham Bay in 1899, and Mr. William R. Warren the same year provided for the other local work. Other contributors toward the field work were Mr. Charles Pryer, Mrs. Esther Herrman, and Mr. Henry E. Pickering.

In the material obtained are found collections of human remains, implements, utensils, etc., from an Indian burial place in Tottenville, Staten Island; Indian skeletons, pottery, stone implements, and various objects of Indian make from an Indian burial place at Croton Neck; various objects from shell heaps and Indian village sites in Westchester and Rockland counties; implements, etc., from Indian sites in Schoharie County; Indian skeletons and other material from village sites and burial places on Long Island. The collectors in the field at various times were Messrs. George H. Pepper, 1895; M. Raymond Harrington, 1899-1903; Alanson Skinner, 1902.

A recent accession to the New York State series is the Booth Archaeological Collection, numbering 1,154 catalogued specimens, presented by Mr. Henry M. Booth. It was gathered almost entirely from the Hudson River valley between Croton and Albany, and well represents the prehistoric culture of the Algonkin Indians of that region.

Booth Archae-
ological
Collection.

Explorations were carried on along the Delaware River near Trenton, New Jersey, for several years, to investigate carefully the question which had arisen regarding the antiquity of man in the Delaware valley.

New Jersey.

The most important discoveries were the remains of several skeletons unearthed from clay belonging to the glacial deposits and a human femur in the vicinity of which were also found an elk bone and fragments of the musk-ox. In addition to these there were discovered several pieces of stone which show evidence of human workmanship that cannot be doubted. All these discoveries seem to establish the fact that America was inhabited by men during Glacial time. The research was begun in 1893 by Mr. Ernest Volk with funds provided by the Duke of Loubat, and continued from 1898 to 1903 through the liberality of Dr. F. E. Hyde.

HISTORY OF THE MUSEUM

Ohio and
Kentucky.

The mounds and burial places in Mason County, Kentucky, were explored by Mr. Harlan I. Smith in 1895, while similar work was carried on in Licking County, Ohio, by Dr. George A. Dorsey, and in Hamilton County by Mr. C. L. Metz in 1895, resulting in the addition of an important series from these regions.

The largest collection of Michigan archaeological remains in any museum was collected in the Saginaw Valley by Mr. Harlan I. Smith and was presented by him in 1896.

B. T. B. Hyde
and F. E.
Hyde, Jr.,
Expedition.

The ancient inhabitants of the pueblos of New Mexico and Arizona, and the cliff dwellings of Colorado and Utah are well represented in the Museum's collections. For this material the Museum is largely indebted to the Messrs. B. Talbot B. Hyde and Frederick E. Hyde, Jr., whose desire that the Museum should have an extensive and authentic collection from the cliff houses, ancient pueblos, burial caves, and mounds led to their supporting expeditions in New Mexico, Arizona, Utah, and Colorado, covering a period of several years. The result included a large series of archaeological objects from the pueblos and skeletons from the prehistoric Pueblo Bonito and other ruins and burial places of New Mexico, and from burial caves in Utah. The field work was in charge of the Curator of the Department of Anthropology, Prof. F. W. Putnam. Members of the expedition at various times were Mr. F. E. Hyde, Jr., Mr. Richard Wetherell, Prof. R. E. Dodge, Dr. A. Hrdlička, F. W. Putnam, G. H. Pepper, and W. Orchard. In addition to the results obtained by their expeditions, the Messrs. Hyde have purchased and presented several important collections; one of great scientific interest was that collected by Mr. Richard Wetherell from the cliff houses and caves of the Grand Gulch region of Utah. It contained mummies and funeral objects of a people evidently distinct from, and who probably preceded, the builders of the ancient stone pueblos and cliff houses. The accessions from the southwest also include a collection of pottery from the modern pueblos, gathered by Mr. Pepper on an expedition in 1903, which was financed by Messrs. B. T. B. Hyde, F. E. Hyde, Jr., and Mrs. Robert W. de Forest.

Southwest.

ANTHROPOLOGY

ETHNOLOGY

Researches among the Indian tribes of North America were begun in 1899 under the North American Research Fund which was established through the liberality of Mrs. Morris K. Jesup, Mr. C. P. Huntington, and Mr. Henry Villard. Later the funds for continuing this work were provided by Mr. Archer M. Huntington, Mrs. Arabella Huntington, and Mr. Morris K. Jesup. Special attention was given to the ancient customs which were rapidly disappearing. The decorative art was also carefully studied by all the collectors, and the Museum now possesses an unrivaled collection illustrating primitive art. Collections were obtained from the Eskimo of Baffin Bay and Hudson Bay, and the following tribes in western United States, Canada, and British Columbia; the Sioux, Sauk, Fox, Comanche, Ute, Blackfoot, Nez Perce, Sarcee, Kootenai, Gros Ventres, Assiniboine, Maidu, Arapaho, Pitt River, Shasta, Yurok, Crow, Alsea, Shoshone, Ojibwa, and Iroquois.

North
American
Indian
Research
Fund
Expedition,
1899-1906.

Another important investigation—the study of the Shoshone and Algonkin tribes—was carried on jointly for the Museum and the Bureau of American Ethnology, by Mr. H. St. Clair and Dr. Wm. Jones. The ethnological work was done for the Museum, while the linguistic researches, largely based on records of tribal traditions, were made for the Bureau of Ethnology.

The collections from the Plains Indians have been made largely from the point of view of illustrating their decorative art and ceremonies. The tribes included in the Plains culture are the Blackfoot, Cheyenne, Arapaho, Gros Ventres, Sioux, and Shoshone. The exhibition series from the Arapaho is especially complete and contains among other things life-sized models of the Arapaho dressed in the regalia used in certain dances. Of special interest in the Blackfoot collection is the Medicine Man's tepee, which was obtained by Dr. Clark Wissler in 1904.

Indians of
the Plains.

The culture of the Indians of California is shown particularly by their baskets, of which the Museum has gathered a very extensive

Indians of
California.

HISTORY OF THE MUSEUM

collection—the exhibition series alone taking up half of one of our exhibition halls. One of the largest gifts to the basketry collection was received in 1901 from Mr. George Foster Peabody. It contained 435 baskets made by the Indians of California, Oregon, Washington, Alaska, and British Columbia, constituting what is known as the “Briggs Collection.”

Briggs
Collection.

Other large contributors are Messrs. Archer M. Huntington and J. G. Phelps Stokes, and Meses. Frank L. Cross, T. K. Gibbs, and C. P. Huntington. The tribes by which the baskets were made are the Maidu, Pomo, and Mission, baskets from each of which fill several cases, also the Moquehumian, Yana, and Wylakie, Yokuts, Shasta, Pitt River, and Hat Creek, Modoc, and Hupa. Other material was collected from the California Indians under the North American Research Fund.

BRITISH COLUMBIA

Jesup North
Pacific
Expedition.

The extensive collections of the Jesup North Pacific Expedition embrace specimens illustrating the archæology of the interior and the coast of British Columbia, and the ethnology of the most important tribes of that region—the Thompson River Indians, the Bella Coola, the Kwakiutl, and the Nootka.

The archæological survey of the Thompson River Region was begun by Mr. Harlan I. Smith for the Jesup North Pacific Expedition in 1897 and continued through 1899. Extensive excavations were conducted near Kamloops and Lytton, where numerous remains of previous inhabitants were discovered. Almost all of the finds antedate the advent of the whites, and give an excellent insight into the culture of the early people. The shell mounds on the Lower Frazer River, and prehistoric stone monuments of Vancouver Island, were also studied by Mr. Smith, resulting in many valuable additions to the Museum's collection.

The ethnological research among the Indians of British Columbia was carried on by Dr. Franz Boas and Messrs. Livingston Farrand and Harlan I. Smith, assisted by the Messrs. James Teit, George Hunt,

ANTHROPOLOGY

Filip Jacobsen, Roland B. Dixon, and John R. Swanton. The information which they succeeded in obtaining regarding the art, traditions, ceremonies, and industries, together with the large collections to illustrate them, form a valuable contribution to our knowledge of the peoples of that region.

The collection from the Tsimshian and the Haida of northern British Columbia contains many paintings and models of totem poles which illustrate fully the use of the crest and the representation of family traditions. There are also many masks and other ceremonial objects. The material collected from the Haida supplements that presented by Mr. Heber R. Bishop in 1882, which together form a very complete collection, illustrating the ethnology of the Queen Charlotte Islands. In the collection from the Bella Coola of Central British Columbia there is a fine set of ceremonial masks illustrating all the important deities of the tribes. A very full collection from the Kwakiutl of Vancouver Island contains a large number of ceremonial masks, together with objects illustrating the industries, fishing implements, etc. The Nootka and Coast Salish of Vancouver Island are also well represented. From the latter we have a fine collection of basketry.

ARCTIC AMERICA

The ethnology of the Tlingit Indians of southern Alaska is fully illustrated in the 4,000 specimens acquired through the purchase of the Emmons Collection, already noted. The collection from the Tlingit contains numerous masks and other ceremonial objects, and a great number of excellent old pieces of superior workmanship. A recent addition to the Tlingit collection was the gift of Mr. Adolph Lewisohn. This comprises a number of baskets and a complete shaman's outfit.

The Athapascan Indians of the Lower Yukon region are represented in the collections made under the North American Research Fund by Mr. John W. Chapman, a resident missionary of Anvik, Alaska.

HISTORY OF THE MUSEUM

Eskimo Collection.

This Museum stands preëminent among all institutions along the lines of ethnological research amid Arctic peoples. The whole culture of the Eskimo tribes, with the exception of East Greenland, is represented in the collections. Material from the Siberian Eskimo was secured by the Jesup North Pacific Expedition; the tribes from the northwest coast of Alaska are represented in the Emmons Collection; a collection from the Mackenzie River region was obtained by Mr. Andrew J. Stone; Captain George Comer made extensive collections in King William Land, the north coast of Hudson Bay, Melville Peninsula, Baffin Land at the extreme north end of Fox Channel, and Southampton Island. The Cumberland Sound region of Baffin Land is represented in the Mutch Collection. The material from Grant Land, Ellesmere Land and North Greenland was collected by Commander Peary, while Holstensborg and Discoe Islands off the southwest shore of Greenland are represented in a collection presented by Mr. G. Frederrick Norton.

Captain George Comer has been collecting ethnological material for the Museum during his extensive whaling cruises. His last shipment, received in 1908, consisted of 308 specimens which he had gathered around Eclipse Sound and Baffin Bay.

Peary Relief Expedition, 1895.

Through Mr. Jesup's relation with the Peary Relief Expedition of 1895, the Museum received the anthropological material gathered by Commander Peary in the Arctic. The collection, which provided material for several groups, contained canoes, sleds, sealskin tents, costumes, and implements used in the chase and in the daily life of the Eskimo.

The material brought back in 1906 was the gift of the Peary Arctic Club. The sledge which Mr. Peary had christened the "Morris K. Jesup," by the use of which he reached the then farthest north record, was received in this collection.

Stefánsson- Anderson Expedition.

The Eskimo along the shores of the Beaufort Sea and among the islands east of the mouth of the Mackenzie River are being studied by Mr. V. Stefánsson and Dr. R. M. Anderson, who left on a Museum expedition in the spring of 1908, to remain in the field for two or three years.

ANTHROPOLOGY

One of the prominent features of the Eskimo Hall is the mural decoration, the funds for which have been generously contributed by Mr. Arthur Curtiss James. The paintings on the northern end of the hall, but recently completed, are the work of Mr. Frank Wilbert Stokes, who, as a member of the Peary Relief Expedition of 1892 and of the Peary North Greenland Expedition of 1893 and 1894, made careful studies of the Eskimo people and their country. On the north wall is the largest picture of the series, a continuous panorama sixty feet long, on which is portrayed the artist's conception of the Eskimo myth of the "Sun and the Moon." The three panels on the east wall represent Eskimo life as it goes on during the Arctic night, while three more on the west wall picture it during the long Arctic day.

Mural
Decorations.

In 1908 the Museum sent Dr. Robert H. Lowie to the Athabaskan region, in the northernmost part of the province of Alberta, Canada, a region which had not been investigated and which was not represented in the collections. Dr. Lowie secured data on the mythology and prehistoric culture of the Chippewyan Indians.

James Bay and western Labrador were visited by Mr. Alanson Skinner on an expedition in 1908. This was the Museum's first expedition into this field. An interesting ethnological collection, numbering 149 pieces, was obtained from the Cree Indians, together with much new and valuable information regarding their religious and social customs.

MEXICO AND CENTRAL AMERICA

ARCHÆOLOGY

Through the interest and generous support of the Duke of Loubat and the expeditions and purchases of the Museum, the Museum has gathered a collection of Mexican and Central American archæology which offers unrivaled opportunities for the study of the ancient civilization of this portion of America.

The exhibition material occupies an entire hall—named the Loubat Hall, in honor of the Duke of Loubat. It is arranged to illustrate the six different cultures—all pre-Columbian—the Mayan, the Nahuan or

HISTORY OF THE MUSEUM

"Aztec," the Mixtecan-Zapotecan, the Tarascan, the Totonacan, and the South Central American.

Loubat
Collection.

The gifts of the Duke of Loubat include casts of prehistoric sculptures from the Valley of Mexico, Chiapas, Yucatan, Guatemala, and Honduras; pottery and other antiques from Mexico and Guatemala; reproduction of books of ancient Mexican picture writing and hieroglyphics, among them a photographic copy of the "Codex Legislatif," an ancient Aztec book preserved in the Library of the Chamber of Deputies, Paris, and heretofore practically inaccessible for reference; and the restoration of the Sanctuary of the Temple of the Cross, at Palenque, Mexico.

Museum
Collection.

Among the collections which the Museum has acquired through its expeditions and purchases, are terra-cotta figures and stone idols from West Central Mexico; original stone sculptures, principally from the ruins of Copan, Honduras; pottery vessels, terra-cotta figures, sculptured stones, weapons, and ornaments from Mexico and Central America, and a collection of copper, gold, and carved jadeite objects which surpasses that in any other museum.

Mexican
Concession.

A concession was granted by the Mexican Government early in 1896 enabling the Museum to establish archaeological research in Mexico and Yucatan. By the terms of the contract, the Museum was permitted to retain all objects found which were duplicates. The explorations under this concession were in charge of Mr. Marshall H. Saville, who secured scientific data and exhibition material of great importance. The ruins of Mitla were explored, also those of Xoxo and Monte Alban in Oaxaca, and Xochicalco in Morelos. The casts taken provided the Museum with the splendid series of reproductions, made at the expense of the Duke of Loubat, which show the art of stone carving and the mythology as illustrated in the sculpture of the various cultures.

Loubat and
Museum
Expedition,
1896.

Loubat
Expedition,
1898,
1900-3.

The Duke of Loubat maintained an expedition in Mexico during 1898 and in 1900-3 under the direction of Mr. M. H. Saville. It was during this time that the Cruciform Structure Guiaroo, near the ruins of Mitla, a model of which is at the Museum, was explored.

ANTHROPOLOGY

Explorations among the Indian tribes of the Sierra Madre Mountains in Mexico were carried on for almost four years by Dr. Carl Lumholtz. Material was collected illustrating the life and customs of the Cora, Huichol, Tarasco, Tarahumaras, and Tepehuana Indians. A full series of ceremonial objects was obtained, together with data showing their meaning. Photographs illustrating the types and ceremonies, together with graphophone records of seventy Indian songs, made the collection complete and of great value. In 1898 Dr. Aleš Hrdlička accompanied Dr. Lumholtz to collect material for comparative study of the past and present tribes of western Mexico. He made a series of anthropometrical records and observations on the physical character of several of the Indian tribes. Plaster casts were taken of twenty-six Tarahumaras and Huichols, and a number of human skeletons and skulls secured from burial places and caves. The notes and records obtained on this expedition proved of great value and interest and formed the basis for two Memoirs and various BULLETIN articles. These explorations were begun with funds given by Mr. Henry Villard, and later continued through the help of several friends of the Museum, among them Messrs. Cornelius Vanderbilt, Austin Corbin, Henry Marquand, James H. Jones, and Dr. William Pepper.

Lumholtz
Expeditions,
1892-1900,
\$13,960.

COSTA RICA

The Museum has an excellent exhibit illustrating the archæology of Costa Rica. The nucleus of it was the collection made by Dr. Francis C. Nicholas on an expedition in 1899, which was financed by Messrs. William Mack, Willard Brown, I. McI. Strong, and R. P. Doremus. Through an exchange in 1908 the collection was enriched by the addition of over 150 specimens of pottery and stone objects, among which are some very rare forms. Another exchange with the Carnegie Museum of Pittsburgh added a few new forms and furnished a rather complete series of small stone objects, especially amulets, beads of jadeite, and other stones.

The ethnology of the Costa Rican Indians is illustrated in a collection obtained by Dr. Nicholas in 1901.

HISTORY OF THE MUSEUM

HONDURAS

Joint Ex-
pedition of
Peabody
Museum and
American
Museum of
Natural
History,
1894.

An expedition to Honduras was made in coöperation with the Peabody Museum of Cambridge, the Peabody Museum having a concession from the government of Honduras permitting archæological researches. The work, which was in charge of Mr. George Byron Gordon, was carried on at the prehistoric ruins of Copan, and as its portion of the finds the Museum received a number of interesting sculptures in stone, besides a collection of small objects in pottery and stone. A series of molds were taken of the sculptures and hieroglyphs of the great stairway of the temple in Copan, and facsimiles made for this Museum through funds provided by the Duke of Loubat. The Museum's share of the expedition's expense was subscribed for by the Duke of Loubat and Messrs. William C. Whitney and Morris K. Jesup.

OTHER COUNTRIES

Through the interest and generous support of the patrons of the Department of Anthropology, the Museum has acquired important collections from South America, northeastern Siberia, China, Africa, the Andaman Islands, the Philippine Islands, and the islands of the Pacific Ocean.

SOUTH AMERICA

The collections from South America are particularly rich in material illustrating the culture of the prehistoric peoples of Peru and Bolivia. The recent acquisition of a collection from the Indians of the Amazon River region greatly increased our representation of the modern tribes, so that now our collections illustrate, to some degree, at least, South American ethnology from Colombia to Terra del Fuego.

Expedition
to Colombia,
1899-1901.

The collections from Colombia include a general exhibition series arranged to show the life and industries, and a large collection of objects in pottery, stone, and shell, a great part of which was collected by Dr. Francis C. Nicholas on an expedition maintained by Mr. Morris

ANTHROPOLOGY

K. Jesup in 1899-1901. A large number of archæological specimens from ancient tombs in Santa Marta, and interesting material from the Goajira Indians were in the collection made by Dr. Nicholas.

The entire collection made by Mr. Hermann Schmidt and Mr. Louis Weiss among the Tukano Indians along the Rio Caiary-Uaupés, the most important tributary of the Rio Negro, was secured for the Museum by Mr. Jesup in 1907. The collection contains five hundred ethnological specimens, an extensive vocabulary of the languages, drawings of the painted figures found on rocks, and a number of folk tales. In the collection are about 300 pieces of feather work, such as head dresses, waistbands, ornaments for the legs and arms, and plumes to be carried in the hand. There are also spears, shields, bows, arrows, blow-guns with their poisoned arrows, fishtraps of basketry, and a variety of baskets and pottery vessels, together with various musical instruments.

Schmidt-Weiss First Collection, \$3,000.

The representation of the modern tribes of Colombia was very recently increased by the purchase of the second Schmidt-Weiss collection. It was gathered among the Indians of the Isana River region, and numbers almost 300 pieces.

Schmidt-Weiss Second Collection.

The archæological series was greatly enlarged in 1908 by an exchange with the Carnegie Museum. The accessions from Colombia also include 150 pieces of curious black ware, gathered by Mr. Frederick F. Sharpless from graves on ancient burial sites in the Cauca Valley, and a few pieces of the same type given by Dr. Francis C. Nicholas.

From ancient Peru, which comprised what is now the Republic of Peru and the greater part of Ecuador, Bolivia, and Chile, has been gathered a wonderful collection which illustrates the highest stage of civilization attained in prehistoric time in South America. The collection is the result of eleven years' field work by Dr. Adolph F. Bandelier. The expedition was begun in 1892 under the patronage of Mr. Henry Villard, and continued since 1894 by the Museum. The pottery obtained from ancient graves along the coast and interior of Peru, Bolivia, and Chile fills several cases, while several more are filled by a general collection showing the industries, decorative art,

Expedition to Peru, 1892-1903.

HISTORY OF THE MUSEUM

amusements—especially musical instruments—and burial customs. There are many skulls of the ancient Peruvians showing various forms of trepanation, artificial deformation, the effects of injuries and pathological conditions, and normal forms.

Garces
Collection,
\$4,072.

From prehistoric sites on the Islands of Lake Titicaca, in Peru, and at Copacabana, Bolivia, was gathered the valuable Garces Collection, which was received in 1896 as a gift from Mr. J. Pierpont Morgan. The collection numbered about 500 pieces, and contained objects in gold, silver, copper, and bronze, pottery vessels, wooden vases, and garments.

Gaffron
Collection,
\$3,200.

The importance of the Peruvian exhibit was greatly increased by the acquisition in 1901 of the Gaffron archaeological collection, the gift of Mr. Morris K. Jesup. It is especially rich in textile fabrics, in feather work, ornaments of silver and gold, vessels of beaten silver, and pottery.

Brazil.

Brazil, both ancient and modern, is illustrated in the accessions from that country. Three of the present-day Indian tribes—the Tukano, the Karaja, and the Mundruchu, are represented.

Ecuador,
Bolivia,
Chile.

The culture of the ancient inhabitants of Ecuador, Bolivia, and Chile is shown in a general collection illustrating the home life, industries, amusements, decorative art, modes of personal adornment, and religious and other ceremonies.

Of special interest among the specimens are the shrunken human heads—war trophies of the Jivaros Indians of Ecuador—and the mummified body from Chile, which was found in a copper mine at Chuquicamata. A very large collection of ancient pottery has been gathered from Bolivia, and some from Ecuador.

Paraguay.

Paraguay is represented by an interesting collection of feather work, basketry, ornaments, and weapons.

Among the collections from the southern extremity of South America are several pieces of feather work made by the Canoe (Yakgan) Indians of Terra del Fuego, and a painted "capa" from Punta Arenas, the latter recently given by Dr. Charles H. Townsend. On a Museum expedition in 1899–1900 Mr. Barnum Brown collected material

ANTHROPOLOGY

which illustrates, to some extent, the culture and physical characteristics of several rapidly diminishing tribes of Patagonia and Terra del Fuego, from the Onas, Yakgan, and especially the Tehuelches, who are noted for their height.

Patagonia
and Terra
del Fuego.

SIBERIA

Extensive collections from the isolated tribes of northeastern Siberia were acquired through the Jesup North Pacific Expedition. The tribes studied by Mr. Waldemar Jochelson and Mr. Waldemar Bogoras, to whom this part of the work was intrusted, include the Chukchee of the extreme northeastern part of Siberia, the Koryak of the north coast of the Sea of Okhotsk and along the Bering Sea, the Kamchadal of the Peninsula of Kamchatka, the Yukaghir and Tungus along the Arctic Ocean, the Yakut in the Lena River region, and the Tungus along the Sea of Okhotsk, also the Yukaghir and Churantzep.

Jesup North
Pacific
Expedition
Collections.

The collections obtained embrace some 8,000 objects illustrating the life, customs, beliefs, and culture of the various tribes; seventy-four plaster casts of faces; skulls and archæological specimens from graves and abandoned village sites; also 450 tales and traditions, texts in the various languages, phonographic records, and hundreds of photographs.

CHINA

For the Chinese exhibit the Museum is indebted to the members of the East Asiatic Committee, which was organized in 1901 for the purpose of acquiring and disseminating knowledge of the peoples of eastern Asia. The formation was initiated by Mr. Morris K. Jesup and Mr. Jacob H. Schiff. The plan included extensive research among the Chinese, and collections and studies on the products and culture of the Philippine Islands and the Malay region in general, and the publication of studies relating to East Asiatic subjects. The sum of \$18,000 was donated by Mr. Jacob H. Schiff for making collections and investigations in China, and a further sum of \$6,850 was con-

East Asiatic
Committee.

HISTORY OF THE MUSEUM

Jacob H.
Schiff
Chinese
Expedition,
1901-1904,
\$18,000.

tributed for the other work by Messrs. Edward D. Adams, Cornelius N. Bliss, Henry C. Frick, Edward H. Harriman, George A. Hearn, Morris K. Jesup, Clarence H. Mackay, Jacob H. Schiff, James H. Smith, and Samuel Thorne. The funds subscribed for the work in the Philippines were insufficient and therefore were devoted toward making available the material collected in China. With the \$18,000 provided by Mr. Jacob H. Schiff the work of making collections and investigations in China was begun in 1901, Dr. Berthold Laufer having been appointed to carry out the plans of the committee. Dr. Laufer remained in China nearly three years and made a systematic collection which covers the various aspects of the social and industrial life, and gives a comprehensive view of Chinese culture. The collections, now installed in the Southwest Corner Hall, are arranged so as to illustrate the industrial and domestic life of the Chinese, their amusements, religion, and arts.

From Chefoo, China, comes a collection of about 150 specimens, acquired through exchange in 1902. It contains a large number of painted scrolls, besides wearing apparel and ornaments, and objects used in religious ceremonials.

INDIA

Andaman
Islands.

The life and industries of the natives of the Andaman Islands, in the Bay of Bengal, are illustrated in the Anderson collection, which was presented by Mrs. Morris K. Jesup in 1908. Among the 251 pieces in the collection are various implements of war and the chase, specimens of basketry, pottery, and ornaments, and a fine example of a Ghost House.

Seton-Karr
Collection.

A recent accession from India is a series of 71 palæolithic implements from the Madras Presidency, India. They were found and presented by Mr. H. W. Seton-Karr, and are interesting as coming from a country archæologically little known. In addition to these are some axes from the vicinity of Banda, also received through the kindness of Mr. Seton-Karr.

ANTHROPOLOGY

A valuable collection of silver work from the Central Provinces of India was presented in 1906 by Mr. J. G. Phelps Stokes. Stokes
Collection.

KOREA

The Museum has an interesting collection illustrating the ethnology of Korea, which was gathered by Dr. C. C. Vinton at various times. More than 275 specimens were received in his shipments of 1907 and 1908.

JAPAN

A very complete representation of the culture of the Ainu, from the Island of Yezo, Japan, has been acquired, largely through the liberality of Mr. Arthur Curtiss James. A collection presented by him in 1898 included ornaments, utensils, weapons, and other objects illustrating the customs of the Ainu. It was supplemented in 1901 by the material gathered by Prof. Bashford Dean and purchased by Mr. James. It comprised religious and ceremonial specimens, and a series of photographs relating to the Ainu. Other Ainu material was collected by Dr. Laufer while at work for the Jesup North Pacific Expedition.

AFRICA

The African material which the Museum possesses comprises collections which will probably, in a comparatively few years, be unique and of inestimable value.

As a result of negotiations carried on early in 1907 the Belgian Government has presented to the Museum four large collections from the Congo Free State, containing more than 3,908 specimens illustrating the customs, culture, and development of the natives of the Congo. The Congo. It contains many examples of native ironwork, basketry, wood-carving, musical instruments, and many fetiches, masks, and other objects illustrating the beliefs and observances of the aborigines.

HISTORY OF THE MUSEUM

- British South Africa.** Another large collection for the African hall was acquired in 1907 through the generosity of Messrs. Percy R. Pyne, Cleveland H. Dodge, and Arthur Curtiss James. It was gathered by Mr. Richard Douglas on an expedition to Barotseland, South Africa, and contains about 5,000 specimens illustrating the basketry, weaving, pottery, musical instruments, weapons, etc., of the natives.
- Douglas Collection, \$5,000.**
- British East Africa.** More than 200 ethnological specimens from British East Africa, gathered by Mr. Richard Tjäder, were received in 1907. Metal work, bead work, wearing apparel, household objects, musical instruments, and a large number of baskets make up the collection.
- Western Africa, Raff Collection.** The Raff Collection of wood-carvings from the tribes of western Africa was acquired by purchase in 1902. The objects are mostly of religious or ceremonial character.
- Bowdoin Collection.** The fast-disappearing culture of some of the tribes of Central Africa is illustrated in a collection which was received in 1903 as a gift from Mr. George S. Bowdoin. It contained implements of warfare, idols, fetiches, and masks, clothing, baskets, and musical instruments, household utensils of bamboo, ornaments of beads, shell, and brass, and seven carved ivory tusks.
- Among the objects from Benin, East Africa, there are many bronze figures, ornaments, and tusk stands. Of great interest and value are the four carved ivory tusks, presented by Mr. Archer M. Huntington in 1908.
- Archæology.** From Mediterranean Africa, the Museum has long possessed a representative series of flaked material, secured by Mr. Andrew E. Douglas through the kindness of M. Jacques de Morgan. In addition there are a few stone implements from Somali Land, presented by Mr. H. W. Seton-Karr. Recently this nucleus has been augmented by a series of prehistoric flints from ancient village sites in the Fayûm Desert, apparently belonging to a later period, probably the Neolithic.

ANTHROPOLOGY

ISLANDS OF THE PACIFIC

The Museum's collection illustrating Philippine ethnology is the largest and most complete in existence. Most of it was contained in the Philippine Exhibit at the St. Louis Exposition, a large part of which was purchased by Mr. Morris K. Jesup and presented to the Museum in 1905. The collection represents the life and industries of all the important tribes. It includes clothing and textile fabrics, household utensils, agricultural implements, fish and game traps, arms, houses, articles of manufacture, and boats and other means of transportation.

Philippine
Islands
Collection.

The Philippine Exhibit was further enlarged in 1908 by 113 specimens collected by Dr. Hugh M. Smith, and a large collection of swords, knives, and spears, presented by Mr. Charles H. Senff.

The most important specimen in the Hawaiian material is an elaborate feather war cape, known as the "Curran Cape," presented by Mr. George S. Bowdoin in 1908.

Hawaiian
Cape,
\$2,500.

A small ethnological collection was made by Mr. Rudolf Weber on a Museum expedition to the east coast of Sumatra in 1894.

Sumatra.

A general idea of the culture of the Samoan Island peoples is shown in the Zimmermann collection containing 99 specimens, purchased in 1906. Among other things it contains a complete outfit for the manufacture of "tapa" cloth, several handsome pieces of finished cloth, and a number of costumes, household utensils, and other implements.

Samoa
Islands.

The life and customs of the various tribes in Central Australia are represented by 200 specimens which were gathered on the Spencer-Gillen Expedition of the National Museum of Melbourne, and acquired by this Museum through exchange.

Australia.

One of the most interesting exhibits from New Zealand is the Robley Collection of Maori heads, which was presented to the Museum in 1907 by Mr. Jesup. Major-General G. Robley of the British Army, who made the collection, took an active part in the Maori campaign of 1864-66 and spent several subsequent years in the country. Gen.

New
Zealand.

HISTORY OF THE MUSEUM

Robley
Collection of
Maori Heads,
\$6,088.

Robley was an enthusiastic collector, and was especially interested in everything that related to the old-time method of tattooing. He succeeded in bringing together thirty-three very fine examples of the tattooed heads, with the implements, pigments, funnel, and all other accessories used during the process, making this the largest and most complete collection in existence illustrating the ancient art of "Moco" or Maori tattooing. The practice of tattooing among the Maori ceased to exist over a generation ago, and the heads are now extremely scarce, so that Mr. Jesup's gift was one of special scientific interest and importance.

Fijian
Collection.

An ethnological collection from the Fiji Islands was received in 1908 through the liberality of Mrs. Morris K. Jesup. It was gathered by Mr. John William Waters during forty years' residence on the Islands, and is especially valuable in that it represents the life of the Fijians before they had become acquainted with iron and its uses. The collection comprises about 1,800 specimens, including household utensils and implements of war and the chase, made of stone, turtle-shell and wood.

Finsch
Collection,
\$3,000.

A good insight into the culture of the natives of New Guinea, New Ireland, and Marshall Islands is obtained from the Finsch Collection, the work of Dr. Otto Finsch, which was purchased in 1898. It numbers 2,144 pieces, and includes casts of faces and samples of hair of the natives, besides about 300 explanatory drawings.

Bismarck
Archipelago.

Schroeder
Collection.

Interesting ethnological material from various islands in the Bismarck Archipelago, brought together by Professor Eugene Schroeder during many years as a resident there, was purchased in 1908 with funds provided by Mrs. Morris K. Jesup. Among the most valuable and striking objects in the collection are several idols from a Ghost House; an ancient death drum, and several ceremonial masks. The collection also contains implements of war and the chase, musical instruments, personal ornaments, clothing, and household utensils.

New
Hebrides
and New
Caledonia.

A fairly representative collection from the Islands of New Hebrides and New Caledonia was received in the Engler Collection, presented by Mrs. Morris K. Jesup in 1908. It contains something over 100

ANTHROPOLOGY

specimens, such as bows, arrows for war and hunting, spears of many forms, decorated lances, clubs, model of a boat, paddles, baskets, cloth, pottery, dishes, ornaments, etc. Engler Collection.

PHYSICAL ANTHROPOLOGY

A series of expeditions devoted to the physical anthropology of southwestern United States and northern Mexico was carried on for the Museum by Dr. A. Hrdlička, the means for which were generously furnished by Mr. Frederick E. Hyde, Jr. The main object was the acquisition of knowledge of the physical features of the present as well as the ancient Indian populations over the territory covered before the advent of the whites by the Cliff Dwellers, Pueblos, and branches of the Nahuas. The territory covered extends uninterruptedly from southern Utah and Colorado in the United States to the State of Morelos in Mexico. The material obtained on the four expeditions comprises measurements of and observations on nearly 3,000 individuals, more than 1,500 photographs, about 300 skulls and skeletons, 120 facial casts, and about 3,000 ethnological and archaeological specimens.

The Museum now has a collection of types from the North Pacific Coast, California, Dakota, Smith Sound, New York, Mexico, the Southwest, Siberia, and Japan.

An extensive series of typical portrait busts has now been assembled, more than 500 molds having been taken from the various living types. They represent typical individuals of the North American tribes, including the Eskimo of the Arctic regions, also the Ainu, the Chinese, the Japanese, and several Siberian tribes. Molds from the Philippine, African, and South American native tribes who were at the St. Louis Exposition were added in 1904.

Several thousand plaster casts of the palates of feeble-minded and normal children and adults were presented by Dr. Walter Channing in 1908. They are of great value in the study of racial characters.

HISTORY OF THE MUSEUM

SPECIAL COLLECTIONS

Demuth
Collection.

One of the special collections in the Department of Anthropology is the Demuth Collection of pipes and smoking materials, brought together through the generous support of Mr. William Demuth, to show the various kinds of pipes and smoking materials used throughout the world.

SCIENTIFIC STAFF

A. S.
Bickmore,
1873-91.

Professor Albert S. Bickmore was in charge of the collections in the Department of Anthropology from the time of its establishment in 1873, and served as Curator from 1885 until he resigned in 1891 to give all his attention to the Department of Public Instruction. He was succeeded after a few months by Mr. James Terry, the Department in the meantime being in charge of Dr. Frederick Starr, who had been engaged to label and arrange the Bishop and Emmons collections. Mr. Terry had been with the Department since June, 1891, and served as Curator from 1892 until 1894.

James Terry,
1891-94.
Frederick
Starr.

Frederic W.
Putnam,
1894-1903.

In 1894 the Department was reorganized with Professor Frederic W. Putnam as Curator. He served in this capacity until the close of 1902, when he resigned to accept an appointment as Director of the Department of Anthropology at the University of California. He continued to be identified with the Museum through 1903 as Advisory Curator of Archæology.

After the retirement of Professor Putnam, the Department of Anthropology was separated into two distinct departments—those of Ethnology and Archæology.

Franz Boas,
1895-1906.

Professor Franz Boas joined the Museum's Staff in 1895 as Assistant Curator of Ethnology in the Department of Anthropology. He was made Curator in 1901, and Curator of the new Department of Ethnology when it was established as a distinct Department in 1902, and held this office until he resigned in 1906. Professor Boas is an anthropologist of international reputation, who has contributed largely to the scientific literature of this subject. He directed the field work of the Jesup

ANTHROPOLOGY

North Pacific Expedition, and was himself a member of several expeditions.

Professor Marshall H. Saville was appointed Assistant Curator when the Department was reorganized in 1894. He served as Assistant Curator of the Archæological Division from 1896 until 1901, when he was appointed Curator of Mexican and Central American Archæology, and Associate Curator of Archæology from 1905 until he resigned early in 1907. He continued to serve the Museum as Honorary Curator of Mexican Archæology until 1909. While connected with the Museum, he spent several years exploring and collecting in Mexico.

Marshall
Howard
Saville,
1894-1907.

In 1905 all the anthropological work was placed under one head, and Dr. Clark Wissler was appointed Acting Curator. The following year he was promoted to the Curatorship, which position he now holds. Dr. Wissler had previously served the Museum as an Assistant and later as Assistant Curator in the Department of Ethnology. His researches have been chiefly among the North American Indians, especially the tribes of the Northern Plains, and on anthropometric problems.

Clark Wissler,
1902-.

In 1909 the scientific staff was augmented by the appointment of Dr. Pliny E. Goddard as Assistant Curator. Dr. Goddard was formerly engaged in anthropological work for the University of California, making a special study of Athapascan speaking peoples.

P. E. Goddard,
1909-.

Mr. Harlan I. Smith has been connected with the department since 1894, and in 1900 was appointed Assistant Curator of Archæology. Mr. Smith has specialized in North American archæology, and as a member of the Jesup North Pacific Expedition made extensive archæological explorations in British Columbia and later in several of the Western States.

Harlan I.
Smith,
1894-.

In 1903 Dr. Livingston Farrand was appointed Assistant Curator of Ethnology and served for two years, when he resigned to accept a position as Executive Secretary of the National Association for the Study and Prevention of Tuberculosis. Dr. Farrand at various times since 1897 had carried on field work for the Museum in the West.

Livingston
Farrand,
1897-1904.

Dr. Robert H. Lowie and Dr. Herbert J. Spinden were appointed Assistant Curators in 1909.

Robert H.
Lowie, 1909-
Herbert J.
Spinden, 1909-.

HISTORY OF THE MUSEUM

Those who have served on the scientific staff as assistants are:

Dr. Berthold Laufer, 1904-6. Dr. Laufer had conducted work in Siberia and Japan in connection with the Jesup North Pacific Expedition, and was in charge of the work of the East Asiatic Committee in China.

Charles W. Mead, 1905-

George H. Pepper, 1905-8.

Alanson Skinner, 1909-

Advisers
and
Specialists.

The scientific work of the Department has been especially advanced by the researches of Dr. Adolf F. Bandelier in Peru and adjacent South American countries; by those of Dr. Aleš Hrdlička in physical anthropology; by those of Mr. Waldemar Jochelson and Dr. Waldemar Bogoras in Siberian ethnology; and of Professors A. L. Kroeber and R. B. Dixon among the Indians of California. Among other distinguished anthropologists who have made investigations for the Department are Professor Albert E. Jenks, Dr. John R. Swanton, Dr. William Jones, Dr. Frank G. Speck, Mr. H. H. St. Clair, Jr., Mr. Ernest Volk, and Dr. Carl Lumholtz.

CHIEF BENEFACTORS OF THE DEPARTMENT OF ANTHROPOLOGY

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H. E. Bard,
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Mrs. Albert Bierstadt,
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George S. Bowdoin,
Barnum Brown,
Dr. Walter Channing,
Christian Missions,
Miss E. H. Cotheal,
Mrs. William de Forest,

William Demuth,
Cleveland H. Dodge,
Andrew Ellicott Douglas,
James Douglas,
Lieut. G. T. Emmons,
Government of Nicaragua,
Archer M. Huntington,
C. P. Huntington,
B. T. B. Hyde,
Dr. F. E. Hyde,
F. E. Hyde, Jr.

ANTHROPOLOGY

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|------------------------|------------------------|
| Arthur Curtiss James, | Francis C. Nicholas, |
| Morris K. Jesup, | George Foster Peabody, |
| Mrs. Morris K. Jesup, | Dr. Wm. Pepper, |
| James H. Jones, | Percy R. Pyne, |
| Dr. Robert H. Lamborn, | Charles H. Senff, |
| Adolph Lewisohn, | Ernest Shernikow, |
| Duke of Loubat, | Jacob H. Schiff, |
| Henry G. Marquand, | Alanson Skinner, |
| E. P. Mathewson, | Harlan I. Smith, |
| Clarence B. Moore, | J. G. Phelps Stokes, |
| J. Pierpont Morgan, | Robert L. Stuart, |
| Henry Villard. | |

PHYSIOLOGY

THE increasing importance of the relation of man to the lower animals, particularly in matters pertaining to health and disease, and the importance of a knowledge of the functions of the organs of the human body, led to the establishment of the Department of Physiology in 1902. These were subjects which could not readily be illustrated with known Museum methods of exhibition so that a great deal of experimentation in methods of preparation was necessary before the subject of physiology could be presented to the public in an interesting and non-repellent way.

The demand for exhibition space for the various departments of the Museum has been so great that it has not been possible to assign an exhibition hall to this department. Laboratory work, however, has progressed very satisfactorily and the Museum's preparation of anatomical material has been examined and approved by visiting scientists. Specimens of the heart have been prepared in such a way that the action of the ventricular valves is clearly shown. Another model with a preserved specimen of lungs shows the action of the diaphragm and its relation to the lungs in the usual process of respiration. Another model in wax and glass demonstrates the function of the kidney, while a large amount of material illustrating the comparative anatomy of man and the lower animals has been prepared.

The increasing attention that is being given to questions of sanitation and spread of contagious diseases by municipal, state, and federal bodies, as well as by many philanthropic organizations, will result in making a physiological exhibit an integral part of a modern museum.

PHYSIOLOGY

SCIENTIFIC STAFF

Professor Ralph W. Tower was appointed Curator of the new Department of Physiology upon its organization in 1902. He has directed the experimentation in the preservation of anatomical specimens and has also developed the method of preparing skeletons by the digestion process.

Ralph W.
Tower, A.B.,
A.M., Ph.D.,
1902-.

In his laboratory work, Professor Tower was ably assisted by Dr. Carl W. F. Münchehofe, who was an assistant in this Department from 1904 to 1908. Dr. Münchehofe had had much experience in laboratory methods, having worked under Virchow, Huxley, and other important European scientists, and had acquired a technic especially applicable to this kind of work. Especially noteworthy are his corrosion preparations of kidneys, lungs, etc., and the specimen and apparatus showing the action of the valves of the heart.

Carl W. F.
Münchehofe
M.D.,
1904-8.

PUBLIC EDUCATION

THE Department of Public Instruction, although not formally established until 1884, began its work in 1881. Its first Curator, Professor Albert S. Bickmore, was one of those instrumental in the foundation of the Museum, and it was he who conceived and planned the system to make the Museum a factor of large usefulness by taking an active part in the education of the pupils of our public schools.

Lectures
on Zoölogy.

In 1880 the Trustees addressed a letter to the Commissioner of the Department of Education, offering a course of lectures, delivered by Professor Bickmore, in the Museum and at the Museum's expense, to the principals and teachers of natural history in the Primary Schools. The idea met with the hearty approval of the Department of Education, and in January, 1881, Professor Bickmore was authorized to prepare a course of lectures on zoölogy. A small workroom on the "attic floor"—Number 11, now used by the Department of Ornithology—was fitted up as a lecture hall. In 1881 the first lecture in the teachers' course was delivered by Professor Bickmore before a class of thirty—all that could be accommodated. This system of visual instruction, as it was called, proved so successful that the Museum was requested to provide room for more teachers. The partition separating an adjoining workroom was removed, which allowed the class to be increased to 150.

Work under
Grants from
the State.

A law passed in 1884 placed the work under the State Department of Public Instruction, with an appropriation of \$18,000, "to establish and maintain a course of free lectures to the teachers of the common schools of New York City and to the teachers of the common schools and normal schools throughout the State, who wish to avail themselves of this training." The Department of Public Instruction was at this

PUBLIC EDUCATION

time officially created, and ten lectures on physiology, zoölogy, and botany prepared for the first course in the autumn of 1884.

The law as reenacted in 1886, with an appropriation of \$18,000 annually for two years, authorized Professor Bickmore to deliver at least one lecture a year at each of the normal schools, normal colleges, and training schools in the State, and further provided that the lectures at the Museum should be repeated to "artisans, mechanics, and other citizens." The latter part of the contract, however, was not complied with until 1890, when the new lecture hall was in use. Law of 1886.

Professor Bickmore traveled abroad extensively to gather the illustrations and data for the series of lectures on travel, the first of which was given in 1887. They were appreciated to such an extent that the Trustees had to hire Chickering Hall for the autumn course, and here Professor Bickmore delivered his lectures before audiences averaging more than 1,300.

By the law reenacted in 1888, \$15,000 annually was appropriated for the next two years, and the privileges accorded the other institutions were extended to the Teachers' Institutes of the State. Law of 1888.

A new lecture hall, seating 1,002, was opened in the latter part of 1889, and in the following year Professor Bickmore delivered the first series of the lectures known as the "Members' Course," and also those to the general public, which were given on holidays.

The law providing for the support of the Department failed to be reenacted in October, 1890, but the work was continued by the Trustees until January, 1891, when the State made an appropriation of \$15,000 annually for the next four years, and at the same time entered into an agreement with the Museum by which the Museum received an extra allowance of \$700 per month. In 1893 this was increased to \$750 per month, and the State appropriation for the next four years was increased to \$18,000. The following year, 1894, an extra \$18,000 was appropriated to supply deficiencies of former years. Law of 1891.

The system was broadened in 1895 by an act to provide the "Visual Instruction Method" to the free common schools of the State, thus permitting the school superintendents in all towns and villages to use Law of 1895

HISTORY OF THE MUSEUM

the lectures given by Professor Bickmore at the Museum; \$25,000 annually was appropriated for the next four years. The whole system of Visual Instruction was at this time placed under the supervision of Professor Bickmore, and a compensation of \$1,000 a month granted for the expenses of inspection, supervision, shipment of material, etc.; \$18,000 annually with \$1,000 a month extra was appropriated for four years beginning with 1897, but this was increased to \$20,000 annually in 1899; \$12,666.66 was granted in 1900 for deficiencies occasioned by the transferring of the appropriation bill.

Law of 1901. The allowance of \$1,000 extra a month was extended for four years from January, 1901; \$38,000 was appropriated for the year 1902, and the same for 1903. This was the last appropriation made by the State for the work. The Saturday morning lectures to teachers were discontinued the following year, and in 1905 Professor Bickmore was appointed Curator Emeritus, his ill-health necessitating a lightening of his duties. He was relieved of all active charge in 1906, and Mr. George H. Sherwood was appointed Curator.

George H.
Sherwood,
Curator,
1906-.

In the Department of Public Instruction is centered all those features of the Museum work which are instrumental in articulating the work of the Museum with the public at large and especially with the educational system of the City. Under this heading are the nature study collections which are loaned to public schools, the lectures for school children, the free lectures on holidays, the lectures in conjunction with the Board of Education, and the opportunities afforded to educators for work at the Museum and Museum extension work with public libraries and similar institutions.

Circulating
Collections.

With the placing of nature study as a part of the curriculum laid down by the Board of Education, numerous requests were made to the Museum by teachers for material to illustrate the course in Nature Study. To meet these demands the Museum prepared a number of cabinets of natural history specimens and instituted a system whereby these were loaned to the schools of the City. When this work was begun, only ten collections were available, but the demand for them has become so great that now the Museum has more than 400, and is

PUBLIC EDUCATION

supplying nearly 400 of the City schools. The collections include birds, insects, mollusks, crabs, starfishes, worms, sponges, corals, minerals, and woods.

Museum messengers deliver the collections in a sequence agreeable to the teacher and call for them at the expiration of the loan period. In the course of a year, this material reaches from 500,000 to 800,000 school children.

Pursuant to a request of the New York City Teachers' Association, the Museum in 1904 arranged for a series of informal lectures to school children, the purpose of which was to supplement the classroom work in geography, history, and natural science. These lectures have been attended by thousands of pupils and have now become a regular part of the Museum's educational work.

Lectures to
School
Children.

Further privileges have been extended in connection with the use of the lantern slides and lecture room. Including the collection of lantern slides deposited by Professor Bickmore, the Museum possesses a collection of slides numbering 35,000, of which fully 12,000 are beautifully colored. Teachers are allowed to select from these slides to illustrate some topic in connection with their work and arrange for special lectures to their pupils.

Special
Lectures.

The free lectures to the public, under the joint auspices of the Museum and the Board of Education, were begun in October, 1900.

Lectures to
the Public.

The first lecture to the public on holidays was given under the State Department of Public Instruction on Thanksgiving Day, 1890. They have been continued since 1904 by the Museum.

Lectures to
the Public
on Holidays.

The lectures in coöperation with Columbia University were begun in 1892.

Columbia
University
Lectures.

In 1906 the Museum appointed an instructor, whose duty it is to meet classes visiting the Museum and explain to them the exhibits, thus enabling them to use their time to the best advantage. A large number of the schools are making use of the Museum in this way. Another feature of this work is the children's room, which was established in 1908, and which is under the immediate supervision of the instructor.

Instructor.

WOODS AND FORESTRY

COLLECTION OF NORTH AMERICAN WOODS

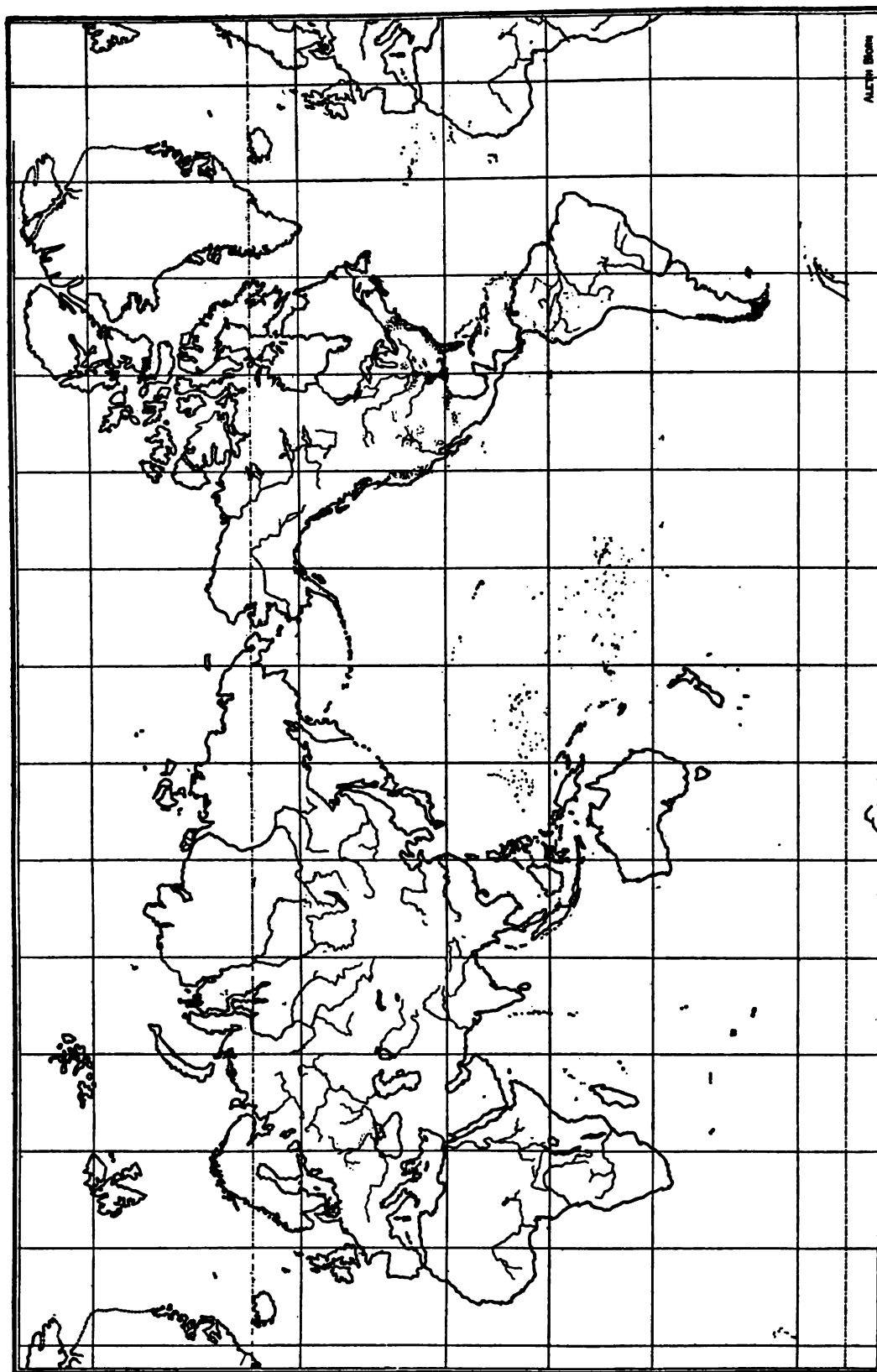
ONE of the first steps taken by Mr. Jesup, after his election as President of the Museum, was toward the establishment—at his own expense and as a gift to the Museum—of a collection showing the natural history and economic features of all the trees of the United States that could be used for commercial purposes.

An especially opportune time for making this collection arose when the Tenth Census of the United States embodied in its work the plan of a report upon the wood resources of our country. Professor Charles S. Sargent was engaged as special agent, and Mr. Jesup fortunately secured his coöperation in the preparation of the collection for the Museum.

The collection of 420 species was formally presented to the Museum in 1891, about twelve years having been required to bring it together. A number of species were at that time lacking, but an expedition sent out in the fall of 1891 secured all but a very few unimportant ones, so that the present collection of 3,092 specimens, of which 505 are on exhibition, is practically complete in its representation of the native woods of North America, north of Mexico. The trunks of the trees in the exhibition series are of an average height of five feet, and cut so as to show vertical, horizontal, and oblique sections, half of each section being polished.

The foliage, flower, and fruit of each species are illustrated by a water-color sketch, the work of Mrs. Mary Robeson Sargent, and some also by artificial sprays in natural size and color.

The sections of the California redwood tree and the giant sequoia



AREAS COVERED IN THE COLLECTION OF NORTH AMERICAN WOODS AND FORESTRY.

WOODS AND FORESTRY

on exhibition in the Darwin Hall were presented by Mr. C. P. Huntington in 1891.

A flawless plank of the California redwood, measuring six feet in width and seventeen feet in length, was added to the collection by Mr. Jesup in 1905.

Specimens of foreign woods were among the very early accessions of the Museum. They were received in 1876, being portions of exhibits of the different countries at the Philadelphia Centennial Exposition. Jamaica and Bermuda presented their entire exhibit, containing a rich display of tropical woods. Brazil, Argentine Republic, and Mexico presented a number of specimens from their exhibit, while others were received from Japan, Turkey, and the Hawaiian Islands.

SCIENTIFIC STAFF

The Jesup collection of North American woods was brought together under the supervision and direction of Professor Charles Sprague Sargent, of Harvard University, under whose charge Mr. Jesup placed the Department of Economic Botany, when it was established in 1880. Professor Sargent was at that time preparing a report for the Tenth Census of the United States on "The Forest Wealth of the United States." Professor Sargent is an arboriculturist of note. He was appointed Director of the Arnold Arboretum of Harvard in 1873, and since 1879 has been Professor of Arboriculture there.

Charles
Sprague
Sargent,
LL.D.,
1880.

Mrs. Mary Robeson Sargent executed the water-color sketches which illustrate the foliage, flower, and fruit of the trees in the Jesup collection of woods.

Mrs. Mary
Robeson
Sargent.

Mr. C. G. Pringle and Mr. A. H. Curtiss were engaged to collect specimens for the wood collection. It was as agents for Mr. Jesup that Mr. Pringle increased the existing knowledge of the trees of Arizona and Southern California, and Mr. Curtiss that of the semitropical forests of Southern California.

C. G. Pringle.
A. H. Curtiss.

LIBRARY

THE Founders of the Museum in their Articles of Incorporation provide for the establishment and maintenance of a Museum and Library of Natural History, and it is a well-recognized fact that a thoroughly equipped library is a necessary adjunct to an institution devoted to scientific research. Since the incumbency of the present Curator, Prof. R. W. Tower, in 1902, it has been the aim of the administration to build up an exhaustive library of natural history rather than a large general library.

In 1902 the Museum possessed a good nucleus of standard scientific works, which had largely been received through the gifts of friends of the Museum. Among those of special importance are the following:

Wolfe. The first important gift was the John C. Jay conchological library, presented in 1874 by Miss Catharine L. Wolfe. It contained about 850 bound volumes and many pamphlets, gathered at a cost of over \$10,000 and forming what was considered the finest library of its kind in America.

Brevoort. The Carson Brevoort library on fishes and general zoölogy, on deposit since 1879, was presented by Mr. Robert L. Stuart. It numbered 2,083 volumes and over 1,000 pamphlets, and included almost all important works on ichthyology up to 1870.

Jewett. A library of voyages and travel, numbering about 350 volumes, was received in 1886 as the gift of Mr. Hugh J. Jewett. Among them were many rare original editions.

Elliot. The ornithological library of Daniel Giraud Elliot, containing 987 volumes and 675 pamphlets, and ranking third of its kind in the United States, was purchased and presented to the Museum in 1887 by Mr. Cornelius Vanderbilt and Mr. Percy R. Pyne.

Elliot. The largest addition, in point of numbers, which has been received at any one time is the library which was gathered by the late Dr. S. Lowell Elliot and presented in 1891 as a memorial by his widow,

LIBRARY

Mrs. M. Schuyler Elliot. It consisted of 9,500 volumes and 3,500 pamphlets on insects, fishes, birds, general zoölogy, geography, and history.

The Harry Edwards entomological library of 500 volumes and 1,200 pamphlets was received with the Edwards Collection of butterflies, which was acquired in 1892, partly through the generosity of friends of Mr. Edwards.

The Marcou collection of works on geology was presented to the Museum in 1898 by Mr. John Belknap Marcou and Dr. Philippe Marcou. It was brought together by Professor Jules Marcou, an eminent authority on geology, and comprises about 3,000 volumes, 5,000 pamphlets and 1,200 maps. It had the distinction of being, with one exception, the largest private library of geology and palæontology in America.

A collection of 1,200 volumes, 960 numbers of serial publications, 1,833 pamphlets and 66 valuable maps, was presented in 1900 by General Egbert Viele. To this gift he later added 676 volumes and a number of pamphlets.

Over 200 volumes on conchology were given by Mr. Frederick A. Constable in 1901.

Following the reorganization of the Library Staff the books on hand were catalogued and made available for reference. The Library was extended through subscriptions to the important scientific periodicals, through exchange and through purchase. The New York Academy of Sciences deposited its library with the Museum Library in 1905 under arrangements which permitted of the merging of the two. This library numbers about 10,000 volumes and is especially rich in the publications of foreign societies, a branch of scientific literature which had been but poorly represented in the Museum.

Following the example of the New York Academy, other scientific bodies have presented or deposited their libraries with the Museum, so that at the present time the Museum's Library is the recognized center in the City for publications on natural science.

Special attention was given to the matter of exchanges, and with the publications of the Academy of Sciences in addition to the large

HISTORY OF THE MUSEUM

series of the Museum publications available for this purpose the Museum now annually receives an extensive list of periodicals on natural science.

The enormous expense attached to the publication of researches has led the Museum to reduce the edition of its publications, but it gives them wide distribution by gratuitously depositing complete sets of the publications in a hundred of the important learned centers throughout the world. At the present time the Library contains 40,000 volumes and 20,000 separata, all completely catalogued and available to all who may desire to consult them.

Since 1902 the Library has been enriched by many gifts, the most important of which are as follows:

American
Ethnological
Society. The Library of the American Ethnological Society was permanently deposited with the Museum in 1903. It numbers 750 volumes and 270 pamphlets, mostly on ethnology and archæology.

Allen. In 1904 Dr. J. A. Allen presented his private library of about 3,800 separata on zoölogy.

Wheeler. The Wheeler collection was also acquired in 1904. It consists of 121 books and pamphlets on arachnida, and many articles on entomology in general brought together and presented by Professor William Morton Wheeler. His library of 571 works on North American Diptera was purchased by the Museum.

Bumpus. Another accession of special interest in 1904 was the gift by Dr. H. C. Bumpus of his entire scientific library. It is especially rich in works on comparative anatomy and contains 311 volumes, 1,661 bound and 1,050 unbound pamphlets, among which were many valuable volumes and rare reprints new to the Museum's Library.

Rogers. A copy of "Audubon's Birds of the United States of America," published in 1834 and valued at \$3,000, was received in 1904 as a gift from Mr. Archibald Rogers.

Osborn. A recent accession of great importance is the palæontological library of Professor Henry Fairfield Osborn, which he presented to the Museum in 1908. It contains between 6,000 and 7,000 volumes, valued at between \$10,000 and \$12,000.

LIBRARY

During the earliest years of the history of the Museum the library was comparatively of small importance, but when the institution took possession of its own building in 1877, the collection of books began to grow. At first it was placed under the care of Dr. Anthony Woodward, then Assistant in Geology. In 1882 Dr. Woodward was made Librarian, a position which he held until 1902 when he was made Curator of Maps and Charts. Beginning with 1902, Prof. R. W. Tower has been Curator of the Department of Books and Publications, a position which carries with it the duties of Librarian. Professor Tower has devoted special attention to increasing the library, and its present efficiency is largely due to his persistent efforts in this direction. V

PUBLICATIONS

✓
THE publications of the American Museum of Natural History consist of the "Annual Report," the "Bulletin," the "Memoirs," "Anthropological Papers," an "Ethnographical Album," and the "American Museum Journal."✓

Bulletin.

The "Bulletin" is a strictly scientific publication in which are published the shorter articles embodying the results of the research work of the various departments of the Museum. These papers are less voluminous and of more general interest than those which appear in the "Memoirs." The first number was issued in December, 1881—the first year of President Jesup's administration—and the first volume was completed five years later. Since 1892 a complete volume has been issued every year. Each volume contains about twenty-four articles, published separately during the year, which relate about equally to Geology, Palæontology, Mammalogy, Ornithology, and Entomology. It is octavo in size, and contains 400 to 975 pages, with many plates and text figures. It has an edition of 750 and is distributed mainly to other scientific institutions in exchange for their publications, and is thus an important means for the increase of our Library.

Memoirs.

The "Memoirs," like the "Bulletin," are strictly scientific, but are devoted to special articles requiring more exhaustive treatment. The issue of "Memoirs" was suggested by Professor Osborn in 1892. Each part forms a separate and complete monograph, usually with numerous plates. The "Memoirs" are quarto in size, and have been published in parts at irregular intervals since 1893. The present edition is 600 copies.

The amount of material brought in and the observations made by the parties at work under the Jesup North Pacific Exploration Fund made necessary the establishment in 1898 of a special series of publications in the "Memoir" form. At first these were issued by the Museum, but since 1904 they have been published by E. J. Brill, Ley-

PUBLICATIONS

den, Holland, under a favorable contract. This firm also publishes the "Ethnographical Album."

The "Anthropological Papers" are really a part of the "Bulletin," devoted exclusively to the results of field work and other research conducted by the anthropological staff of the Museum. They are published in octavo volumes of about 350 pages each, issued in parts at irregular intervals. The first issue was in 1907. The present edition is 600.

Anthropological Papers.

The publication of the "American Museum Journal" was begun in April, 1900, at the suggestion of Professor Osborn. The "Journal" is a popular record of the progress of the Museum. It was started to give to the members and the public the Museum news in popular and interesting form, and as a medium for the prompt acknowledgment of gifts and for making widely known the needs of the Museum. The "Journal" has an edition of 3,000 and is issued monthly from October to May.

American Museum Journal.

It has been the policy of the administration of the Museum so to label the exhibits that visitors would have the information desired without the use of a voluminous general guide. The interest of the public, however, in various collections led Director Bumpus to suggest the publication of Guide Leaflets on these special subjects. These leaflets, now thirty in number, appear irregularly and in editions which vary with the popularity of the subject matter discussed. /

Guide Leaflets.

Prof. R. P. Whitfield, Curator of Geology, established the form and character of the "Bulletin" through the first four articles, which were contributed by him and published in 1881 and 1882, but there was no definite editor until Prof. J. A. Allen assumed the editorship with the issue of Vol. I, Part 5, in 1884. Professor Allen became editor of the "Memoirs," likewise, when they were established in 1893. Prof. Franz Boas has been the editor of the special series of memoirs pertaining to the Jesup North Pacific exploration since it was begun. Dr. Clark Wissler is the editor of the "Anthropological Papers." Mr. W. K. Gregory was made editor of the "American Museum Journal," when that was established in 1900, but since October, 1901, Dr. Edmund Otis Hovey has been editor of the "Journal" and the Guide Leaflets.

FUTURE SCOPE AND ARRANGEMENT OF THE EXHIBITIONS

THE wonderful growth of the American Museum, which gives it a rank second only to the British Museum, which places it among the first of our educational and research institutions in this country, which relates it to the college and university system not only of New York but of the entire United States, should encourage us not to stop, but to go on with increased vigor and intelligence. If this is to be a truly great country, its intellectual growth must keep pace with or in advance of its material prosperity.

It is important to realize that only a beginning has been made; that the new methods which have been developed in certain departments should be extended to all departments; that some of our collections, as compared with those of the British Museum, or even of other American museums, are in their infancy; that certain departments of science, which properly belong to a natural history museum, have barely been suggested; that everywhere the lack of sequence in the arrangement of the collections is most confusing to the visitor. Finally, while gratifying progress has been made in connection with the public educational system of the City, we should render even greater service than we have been doing to the common schools, the high schools, the colleges and the universities. In other words, the Museum, through its influence on teachers and on pupils, should become a more vital part of the educational system of the City, which alone will justify increased appropriations for maintenance and will justify the Trustees in their appeal to liberal-minded citizens for an increased endowment.

FUTURE SCOPE AND ARRANGEMENT OF EXHIBITIONS

Briefly, these various objects may be summarized as follows:

1. Closer relations with the system of Public Education.
2. Extension of the exhibition system to pure science, astronomy, physics, geography, physical geography, oceanography.
3. Applications of science to public health, economic forestry, economic zoölogy, mines and mining.

In the new Department of Public Health, for example, we should pursue the fine beginning which has been made and show the relation of the simpler forms of animal and plant life to germ and protozoan diseases along the lines begun in the mosquito exhibit.

The Department of Public Health.

In the Department of Woods and Forestry, we should display the principles of conservation and teach the lessons of economy rather than of waste in the natural resources of our country.

Conservation.

In the pure sciences, astronomy has never found its way into any natural history museum until the present admirable beginning made in this institution, to the instruction and delight of thousands of visitors. It is obvious from the laws of the unity of nature, taught by Humboldt and Darwin, that all causes are ultimately astronomic and physical. Certain temporary exhibits of solar, lunar and stellar photographs from the Yerkes and other observatories have proved both fascinating and instructive to the public. We already have the promise of the superb photographs which are now being secured by Professor Hale of the Carnegie Institution at Pasadena. These display the evolution of worlds, the corona of the sun, the vortical nature of the sun spots. Other astronomers in our observatories, which now lead the world, will be glad to send us their latest negatives. Displayed in a darkened room, with transmitted light, these negatives give a perfect vision of the heavens as they appear through our largest telescopes. Such an exhibition could be arranged at comparatively small expense on the first floor of the new Rotunda.

Astronomy.

Similarly, in Physical Geography, we are promised the hearty co-operation of Professor Davis of Harvard University, the leading

Physical Geography.

HISTORY OF THE MUSEUM

student of this subject. He is ready to plan a hall which shall be devoted to the great surface phenomena of the earth, to the mountains, the rivers, the glaciers, the snow peaks, the volcanoes, the valleys, the cañons and all the other wonderful features of the earth's surface which he may display through photographs and through models.

Geography. The beginning which has been made by the Museum in geography in the projection of the Arctic and Antarctic regions has attracted so much attention and such close study by visitors that it is clear that the way is open for a complete geographic exhibit. Already, through an arrangement with the American Geographical Society, under President Huntington, a typical globe, embodying the very latest results of geographical research, has been prepared, which will serve as the basis on which can be recorded not only all the geographical and physical features of the earth, but the distribution of plants and animals and of the races of men. It is obvious that geography is the subject above all others through which we may get into close touch with the work of the public schools; that advanced museum methods of geography, such as we shall adopt, will be a great aid both to teachers and to pupils—in fact, it will put the whole science on a new basis in the City of New York.

Oceanography. Oceanography is another of the new subjects which it is proposed to develop, both on its physical side—the content of the sea and of the geographical sea bottom—and on its living side—the marvelous and peculiar forms of sea life. America has been one of the leaders in this subject, through the voyages of the “Blake” and of the “Albatross,” under Alexander Agassiz and others. At the present time, the “Albatross” has been offered to the Museum by the United States Department of Fisheries for use in the Antarctic, which will enable the Museum to secure its first oceanographic collections and train its first observers in this field.

The following conspectus of the present and future scope of the exhibitions is the taking stock of what we have and of what we need to carry out these plans.

FUTURE SCOPE AND ARRANGEMENT OF EXHIBITIONS

CONSPECTUS OF THE PRESENT CONDITION AND THE FUTURE SCOPE OF EXHIBITIONS

Astronomy

| | |
|--|-------------------------|
| Solar and planetary system | Exhibitions begun. |
| Earth and the moon as planet and satellite | Exhibitions begun. |
| Star system and evolution of the worlds. . | No exhibitions ready. |
| Meteorites. | Creditable collections. |

| | |
|------------------------------------|--|
| <i>Physical Sciences</i> | Practically no exhibi-
tions ready. |
|------------------------------------|--|

Earth Sciences

| | |
|-------------------------------------|---|
| Geography. | Preliminary exhibitions
begun. |
| Physical Geography. | Preliminary exhibitions
begun. |
| Geology and Palæogeography. | Exhibitions and collec-
tions begun. |
| Mineralogy and Mines | Minerals extensive ; no
exhibitions of mines
ready. |

The Sea Sciences

| | |
|------------------------|---|
| Oceanography | Creditable beginning on
abyssal forms of life. |
|------------------------|---|

The Life Sciences

| | |
|-----------------------------|--|
| Woods and Forestry. | Full exhibitions. Meth-
ods of Forestry to be
added. |
|-----------------------------|--|

Zoölogy and Palæontology

| | |
|------------------------------|---|
| <i>Invertebrates</i> | |
| Shells. | Extensive series. |
| Other invertebrates. | Incomplete collections. |
| <i>Vertebrates</i> | |
| Fishes. | Very incomplete exhibi-
tions and collections. |

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Zoölogy and Palæontology—Continued

| | |
|-----------------|---|
| Amphibians..... | Very incomplete exhibi-
tions and collections. |
| Reptiles..... | Very incomplete exhibi-
tions and collections. |
| Birds..... | Complete exhibitions.
Much to be done. |
| Mammals..... | Fair collections. Much
to be done. |

Anthropology, Archæology, and Ethnology

America

North America

| | |
|--|-------------------------|
| New York and Atlantic coast Indians. | Fair collections. |
| Central States, Mound Builders..... | Abundant collections. |
| Indians of the Plains..... | Growing collections. |
| Indians of the Southwest..... | Growing collections. |
| California..... | Small collections. |
| North Pacific Coast, British Columbia
and Alaska..... | Creditable collections. |
| Eskimos..... | Extensive collections. |

Mexico and Central America

| | |
|-------------|-----------------------------|
| Mexico..... | Fair collections. |
| Yucatan | } Scanty collections. |
| Honduras | |
| Guatemala | |
| Costa Rica | |

South America

| | |
|-------------------------------------|--|
| Ecuador | } Little ethnology; more
of archæology. |
| Bolivia | |
| Colombia | |
| Peru | |
| Chile | |
| Eastern Coast of South America..... | No collections. |

FUTURE SCOPE AND ARRANGEMENT OF EXHIBITIONS

Anthropology, Archæology, and Ethnology—Continued

Europe and Asia

| | |
|--------------------------------|---------------------------------|
| Siberian tribes..... | Extensive collections. |
| Origin of civilized races..... | A fair beginning has been made. |

| | |
|-------------|---------------------|
| Europe..... | Scanty collections. |
|-------------|---------------------|

Asia

| | |
|------------------|---------------------------|
| China..... | Fair general collections. |
| Japan..... | Practically nothing. |
| Korea..... | Little of note. |
| Philippines..... | Creditable collections. |

Indo-Malayan Islands

| | |
|--------------|----------------------|
| Borneo..... | Practically nothing. |
| Sumatra..... | Practically nothing. |

| | |
|----------------|----------------------|
| Australia..... | Practically nothing. |
|----------------|----------------------|

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|------------------|----------------------|
| New Zealand..... | Initial collections. |
|------------------|----------------------|

| | |
|---------------|----------------------|
| Tasmania..... | Initial collections. |
|---------------|----------------------|

Africa

Native races

| | |
|--------------------------|-------------------------|
| From Central Africa..... | Creditable collections. |
|--------------------------|-------------------------|

South Pacific Islands

| | |
|-------------|----------------------|
| Hawaii..... | Practically nothing. |
|-------------|----------------------|

| | |
|----------------|-------------------|
| Polynesia..... | Fair collections. |
|----------------|-------------------|

Man and Nature

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|--------------|--------------------------|
| Anatomy..... | A few exhibitions ready. |
|--------------|--------------------------|

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|----------------------------|----------------------------|
| Physical Anthropology..... | A beginning has been made. |
|----------------------------|----------------------------|

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|-----------------|----------------------------|
| Physiology..... | Exhibitions begun in 1904. |
|-----------------|----------------------------|

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|--------------------|----------------------------|
| Public Health..... | Exhibitions begun in 1904. |
|--------------------|----------------------------|

HISTORY OF THE MUSEUM

SEQUENCE AND ARRANGEMENT OF COLLECTIONS

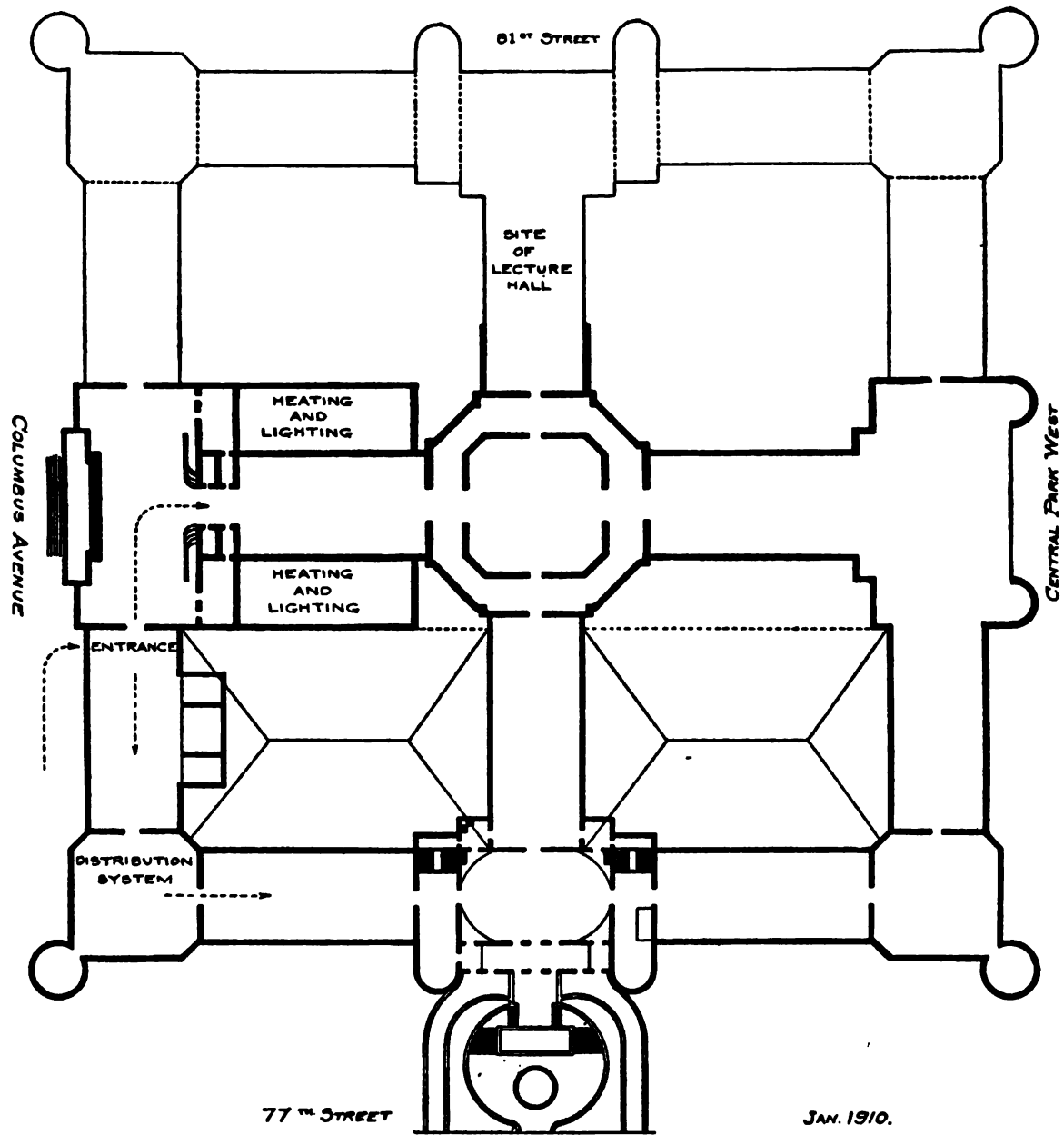
The natural sequence of the exhibitions in each hall and in successive halls is an educational principle of very first importance. It is as important in natural history as it is in art. Visitors to the Berlin Museum will recall the educational advantage of the arrangement of the picture galleries according to the sequence of schools in various countries. Exactly the same idea applies to a museum of natural history. Yet with the exception of the Agassiz Museum in Cambridge, no large museum, to our knowledge, has grasped the idea of the natural grouping of halls or the natural sequence of subjects.

There are two principal ideas in sequence, namely:

Geographical Arrangement.—In this the visitor passes from country to country, as he would in traveling. In American anthropology, for example, he passes from East to West and studies the tribes of New York, of the Central West, of the Plains region, of the Southwest, of Mexico, and of Central America. Such lines of travel furnish a very desirable arrangement for certain classes of exhibits, both in anthropology and in zoölogy.

Evolutionary Sequence.—This is the sequence of development. The visitor compares primitive races with more civilized races. He follows the progress of eolithic, palæolithic, and neolithic man, or he traces the first steps of nature, the lower into the higher forms of plant and of animal life. He begins with the simple organisms of the water and traces the evolution step by step into the higher organisms of the earth and of the air.

Briefly, it may be said that both the geographical and evolutionary arrangements, or kinds of sequence, are necessary in a great museum. Sometimes the geographical arrangement is better; sometimes the evolutionary, and sometimes both may be more or less combined. One thing is absolutely essential: a well-ordered museum should present a natural arrangement which the visitor can grasp and which will have the same influence on the mind as travel or the direct observation of evolutionary objects in the state of nature.



BASEMENT. MECHANICS, PAINTERS, AND CARPENTERS.

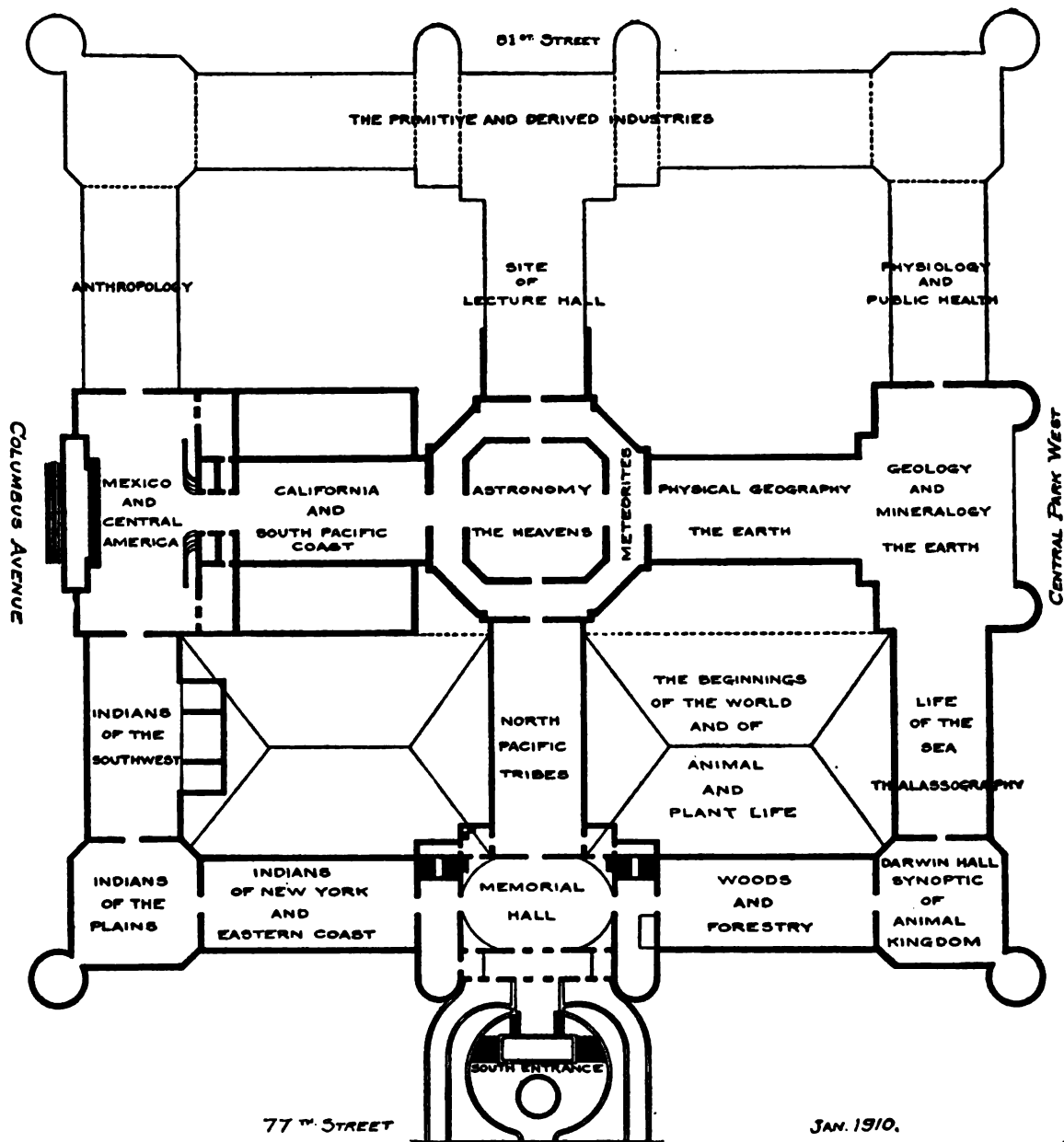
HISTORY OF THE MUSEUM

Fortunately the original plan of the American Museum by Calvert Vaux in 1873, of a great square with intersecting transepts, admirably provides for such sequence—both geographical and evolutionary. In fact, with all the advance which has been made in the construction and design of museum buildings, within the last thirty years, nothing superior to the ground plan of the American Museum has been devised. This is a most fortunate circumstance. It was undoubtedly arrived at accidentally—one of those happy accidents which relieves the Trustees of a mass of difficulties and embarrassments from which other institutions have suffered.

BASEMENT.—The new Basement Entrance provides not only for the central distribution of fuel, but also for a receiving and distributing department of everything which enters and leaves the Museum, replacing the present South Entrance. A level trolley and track system will connect the receiving department with the entire basement area, and thus with all the stairways and elevators which may be constructed. In the basement all the work of mechanics, painters, carpenters, and joiners is provided for, as well as comfortable rooms for the employees between hours. Provision is made also for the reception and storage of large collections, casts, etc., in a rough state, and certain rough grades of preparation work. The heating and lighting plant will be placed economically south of the West Transept.

FIRST FLOOR.—The first floor will be devoted on the east side to certain physical and biological branches of science, and on the west to American Anthropology especially of North America. It will be appropriate to devote the FOYER, after the removal of the meteorites and the planetary system, entirely to memorials of the Trustees, of prominent members of the Scientific Staff, and of men distinguished in the history of American science.

The scientific sequence of this floor will be understood by beginning with ASTRONOMY in the Rotunda, in which, in a darkened hall, photographs of the heavens will be displayed by transmitted light, as explained above. The adjoining East Transept and East Entrance



ANTHROPOLOGY
OF NORTH AMERICA.

THE HEAVENS, THE EARTH, THE SEA,
THE FORESTS, LOWER ORDERS OF LIFE.

FIRST FLOOR.

HISTORY OF THE MUSEUM

Pavilion may be devoted appropriately to the sciences of the earth, to PHYSICAL GEOGRAPHY, GEOLOGY, and MINERALOGY. This floor and the space under the entrance steps leading to the second floor entrance lends itself to the display of sections of mines and sections of the interior of the earth. In the adjoining Southeast Wing the visitor will pass into OCEANOGRAPHY — the geography and physical constitution of the sea bottom and sea water — as an introduction to the LIFE OF THE SEA, which, in turn, will lead into the Southeast Pavilion devoted to a synopsis of the ANIMAL KINGDOM, especially the lower forms of life, a hall which was dedicated to the memory of Charles Darwin on the one hundredth anniversary of his birth. The communicating South Hall will be devoted to WOODS AND FORESTRY, an extension of the already remarkable Jesup Collection, into the domain of Applied Forestry. Passing through the MEMORIAL HALL we enter the South Transept, which will be devoted entirely to the North Pacific Tribes of Indians from British Columbia to Alaska the Eskimo Exhibit to be removed to the floor above.

Passing from the Memorial Hall to the west we enter the South Hall devoted to the INDIANS OF NEW YORK, of the eastern coast of the United States, and the CENTRAL STATES, including the Mound Builders. This is a natural geographic introduction to the INDIANS OF THE PLAINS, which may occupy the Southwest Pavilion and lead naturally into the Southwest Hall devoted to the INDIANS OF THE SOUTHWEST, especially to the splendid collections assembled by the Hyde Expeditions and the present Huntington Expeditions.

A grand feature of the Museum will be the new West Entrance Pavilion, devoted to MEXICAN AND CENTRAL AMERICAN ARCHÆOLOGY, a two-story hall with gallery, suitable for the reception of reproductions of portions of the great temples, altars, and stelæ of the Aztec, Zapotecan, and Mayan cultures, in which the native art and architecture of America reaches its high-water mark. It is proposed to add to the Loubat Collection by fresh expeditions in Mexico, and to secure by exchange and purchase other collections now

FUTURE SCOPE AND ARRANGEMENT OF EXHIBITIONS

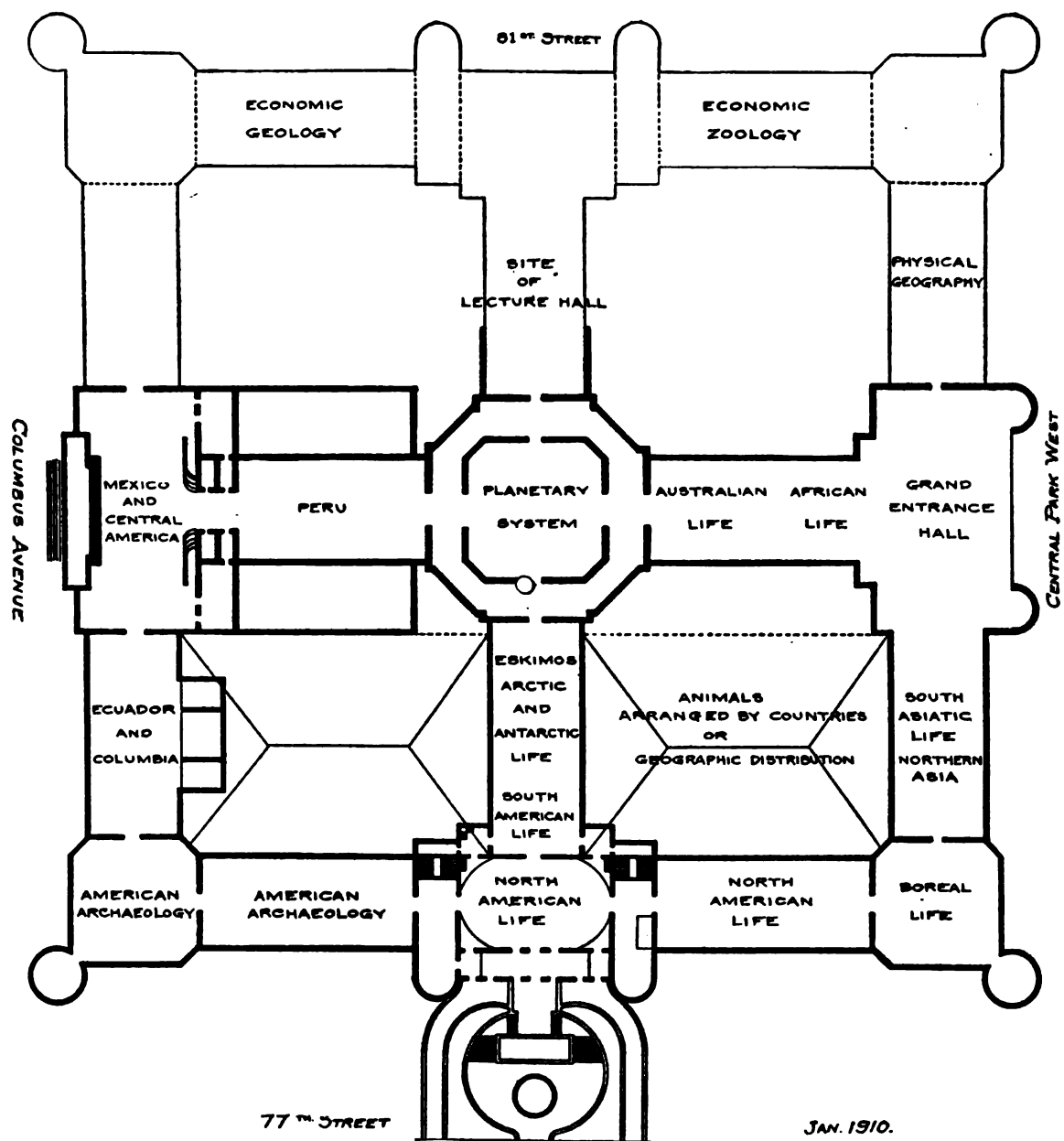
in this country, so that it is believed this grand hall will be completely filled, and constitute one of the finest features of the Museum. Studies are being made for the architectural and mural decoration of the hall in keeping with its contents, so that it will be for all time the anthropological gateway to the Museum and the main evening entrance.

Adjoining this hall will be two smaller auditoriums capable of seating three hundred persons each, for the use of public school teachers and pupils, the New York Academy of Sciences, and other affiliated societies.

The West Transept may be devoted to the ARCHÆOLOGY AND ETHNOLOGY OF CALIFORNIA and the South Pacific coast.

SECOND FLOOR.—The second, or main floor of the Museum may be devoted on the east to the Geographic or Faunistic arrangement of the Higher Animal Life of the World, and on the west to a continuation of American Anthropology and Ethnology. The Rotunda will be occupied by an elaboration of the PLANETARY SYSTEM which is now placed in the Foyer. A grand new East and West Transept connecting the East Entrance Hall with the West Entrance Hall will provide space for the permanent display of the relative distances of the remote planets.

The entrance point of the second floor will be the grand new East Entrance Hall, a two- or possibly three-story opening surrounded by galleries. Facing the visitor will be the East Transept Hall devoted, to the LIFE OF AFRICA, for which collections are now being made in British East Africa, in the Uganda Protectorate, and in the Congo, in addition to the already considerable collections in the Museum. It is proposed here to give the visitor an impression of the entire life of Africa, of its most distinctive mammals, birds, reptiles, and fishes, as well as types of man. Supplementing these exhibits will be photographs and transparencies of characteristic African scenery. Models will display the principal geographic and physiographic characters. In brief, a visit to the African Hall will resemble as nearly as is possible in a museum a visit to Africa itself. This method of treatment is



JAN. 1910.

ANTHROPOLOGY
OF NORTH AND SOUTH
AMERICA.

ZOOLOGY.
MAMMALS, BIRDS, REPTILES, AMPHIBIANS
AND FISHES IN GEOGRAPHIC ORDER.

SECOND FLOOR (MAIN).

FUTURE SCOPE AND ARRANGEMENT OF EXHIBITIONS

entirely practicable. Through our expeditions and through the gifts of the late King Leopold of Belgium we shall soon be able to give a complete synthetic treatment of this remarkable country. At the end of the hall may be an exhibit of the entirely unique LIFE OF AUSTRALIA, its vegetation, its peculiar mammals, birds, and fishes, and its inferior human tribes. Unfortunately the Museum possesses few materials for this exhibit at present.

Halls arranged on the same principle will extend in geographic sequence around this entire floor. Thus the visitor passes, in the Southeast Hall, into the SOUTH ASIATIC LIFE, materials for which are already in the Museum and will be amplified in the course of the next few years; this life is closely akin, in fact, it was only in recent geologic time detached from, that of Africa. In the same hall we next pass into the LIFE OF NORTHERN ASIA, which is closely akin to that of the northerly region of America; and thus by an entirely natural transition we enter the BOREAL LIFE OF ALASKA AND BRITISH COLUMBIA, vast materials for which are already in the possession of the Museum or on exhibition.

Passing around we enter the NORTH AMERICAN LIFE of the South Hall, an extension of the collections already displayed there, which may extend into the South Central Pavilion. This will lead the visitor naturally into the Life of the Southern Portions of North America, the so-called Sonoran Zone, which, in turn, will introduce us naturally into the SOUTH AMERICAN LIFE, from the Andes to the Pampas, Patagonia, and Terra del Fuego. Materials for the exhibits are partly in the Museum, partly to be collected through our proposed expeditions in South America. The remainder of this hall may be devoted to the CIRCUMPOLAR LIFE, or LIFE OF THE ARCTIC and ANTARCTIC regions, connecting with the LIFE OF THE ESKIMO, which may be removed from the floor below. Superb materials for the exhibits of Arctic life are already in hand through the Peary expeditions. It is proposed to enter actively upon Antarctic exploration to supplement our decidedly limited materials from this region.

HISTORY OF THE MUSEUM

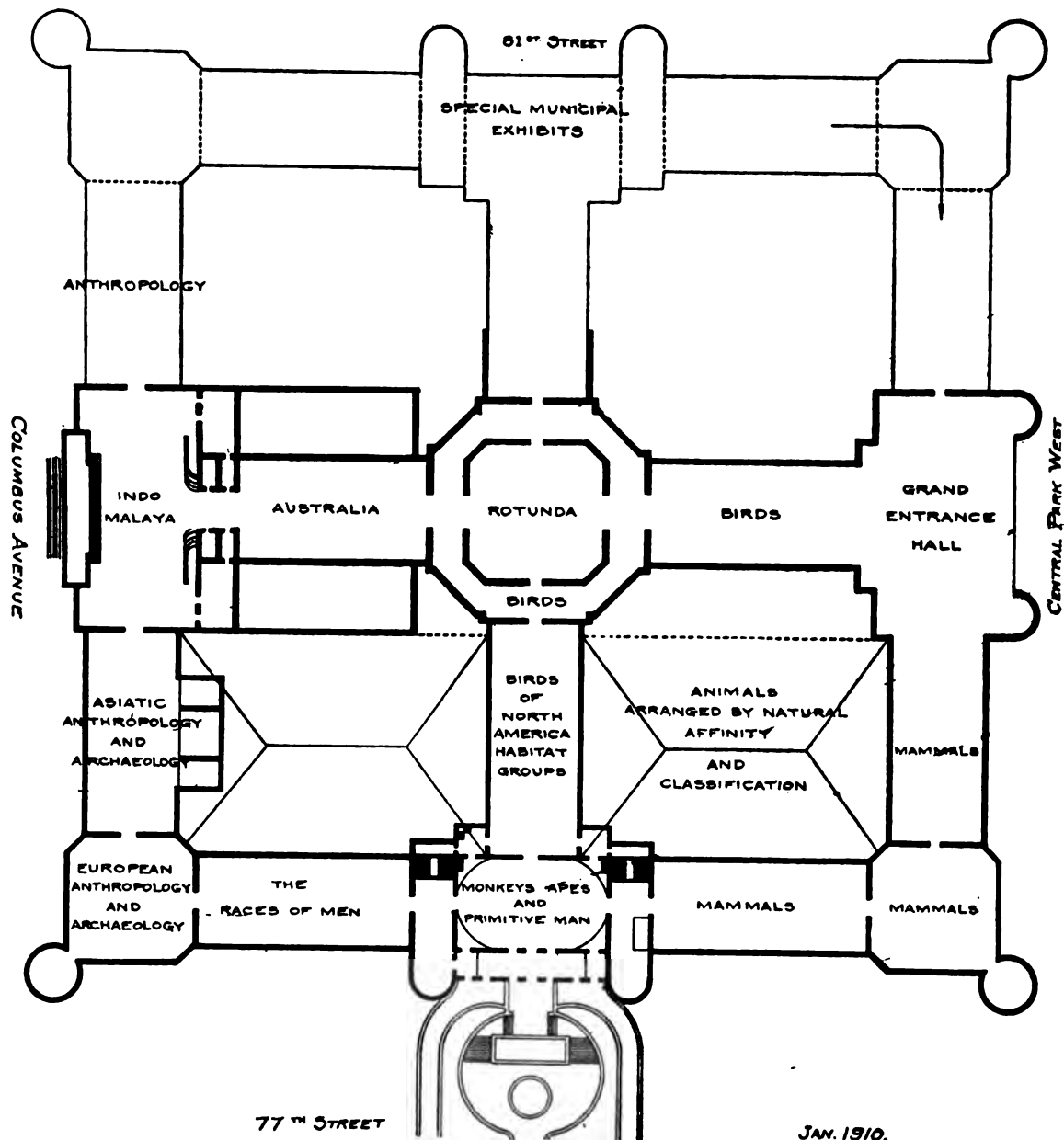
This circle completes the circuit of the world and will be equivalent to a great journey around the globe and from pole to pole.

The anthropological section to the west may include two halls devoted to AMERICAN ARCHÆOLOGY extending into the Southwest Pavilion, rich materials for which are already in the possession of the Museum. From this we pass into the Southwest Hall, which may be devoted to the Archæology and Ethnology of ECUADOR AND COLOMBIA, in which our materials are at present very limited. This naturally connects with the gallery floor of the MEXICAN AND CENTRAL AMERICAN HALL, and leads into the PERUVIAN HALL in the West Transept, in which our collections are particularly rich through the gifts of Mr. Henry Villard and others.

THIRD FLOOR.—The third floor may be devoted on the east to the Animal Kingdom, arranged by natural affinity or classification, and on the west to the Anthropology of Europe, Asia, Indo-Malaya, and Australia.

If the second floor is especially devoted to the needs of the general student, the third floor may be arranged especially for the needs of special students of zoölogy of high school, college, and university grade, as well as for animal lovers. On this floor we enter the South Transept with its beautiful HABITAT GROUPS OF BIRDS, improved by the widening of the galleries. We pass into a SYSTEMATIC COLLECTION OF BIRDS arranged according to affinity in the Rotunda Gallery and also in the East Transept, and extending, if necessary, into the galleries of the grand Entrance Hall. This leaves four halls for the SYSTEMATIC COLLECTIONS OF MAMMALS. One may be devoted appropriately to a SYNOPTIC COLLECTION, or key to the classification of mammals, another to a COLLECTION OF WHALES. The Central South Pavilion may be devoted permanently to the Collection of MONKEYS AND APES, extended to include the Transition to Primitive Man.

This hall will naturally connect with that devoted to the RACES OF MEN on the west, a subject of the utmost importance which we



ORIGIN OF MAN.
EUROPE, ASIA.
HISTORY OF CIVILIZATION.

THIRD FLOOR (GALLERY).

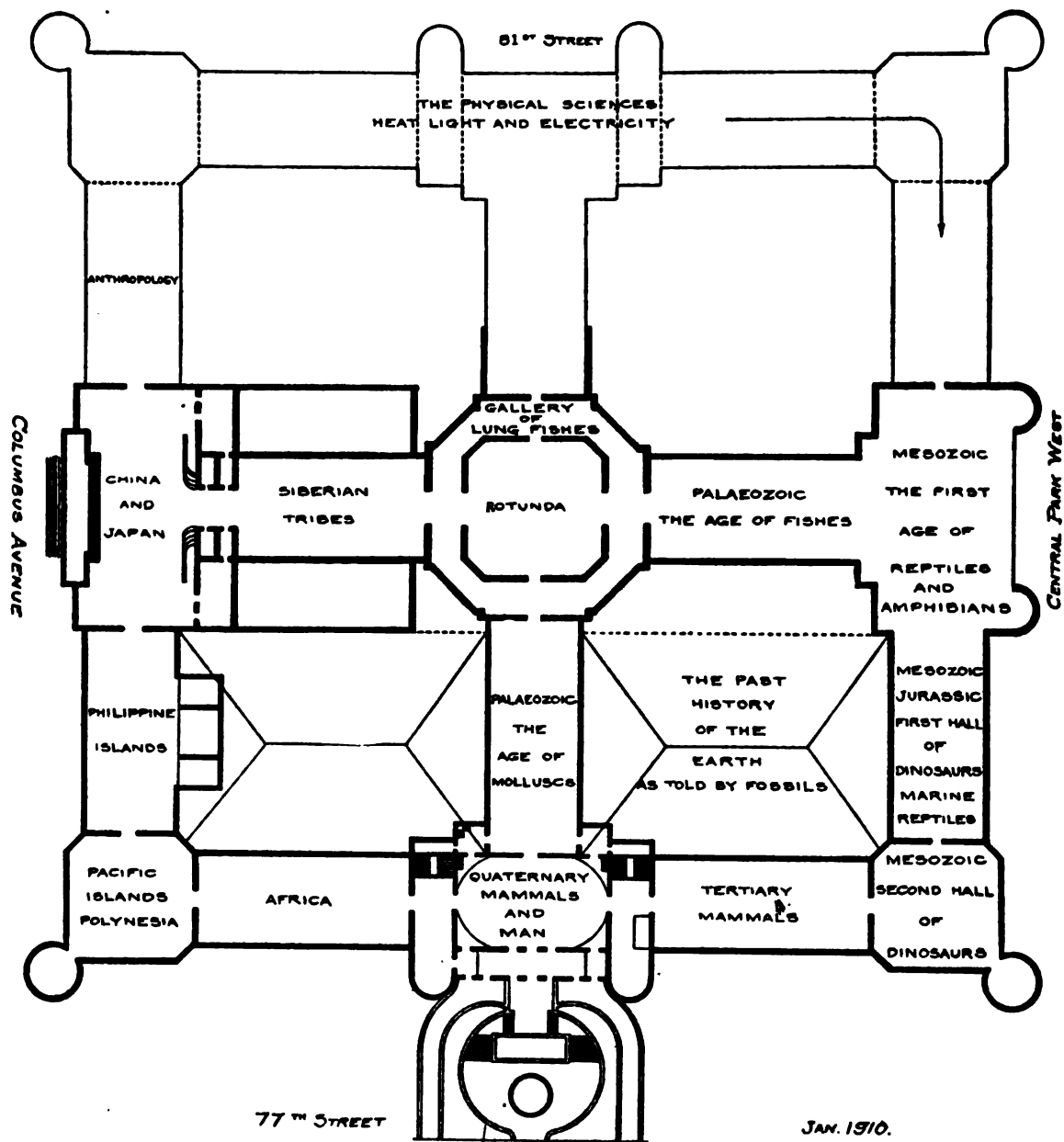
MAMMALS, BIRDS, REPTILES,
AMPHIBIANS AND FISHES IN
ORDER OF KINSHIP.

HISTORY OF THE MUSEUM

have hardly begun to treat. It is important to observe that this floor will give us the History of the Origin of Civilization. We shall have a passage from the anthropoid apes to the most primitive races of men, and be able to trace the successive human cultures, as displayed only in Old World remains. Valuable collections are already in the Museum illustrating these culture stages, but we need to supplement them by others, and to give the entire collection arrangement under the best scientific authorities. The subject is naturally one where the American Museum for the first time touches the historian. ASIATIC ANTHROPOLOGY and ARCHÆOLOGY will naturally lead out of the European. Here again our collections are very limited, Similarly we have only made a beginning in the INDO-MALAYAN ARCHIPELAGO and in AUSTRALIA, which will complete this Anthropological Circuit.

FOURTH FLOOR.—The Fourth Floor is the finest in proportions of any of the floors and best lends itself to the display of objects of large size requiring considerable vertical space. It is therefore peculiarly suited to the display of the PAST HISTORY OF THE EARTH, on the east side, and of the anthropological collections of Africa, Polynesia, the Philippines, China and Japan, and the Siberian tribes, on the west side. Again, the circular arrangement of the halls in the completed south plan enables us to present a perfect evolutionary sequence on the east, and a natural geographic sequence on the west.

The Past History of the Earth, as told by fossils, begins with the PALÆOZOIC, or AGE OF MOLLUSKS, provided for by the great James Hall Collection and additions which have been made to it, in its present location, namely, the South Transept Hall. The collections await rearrangement, the elimination of certain parts which more properly belong elsewhere, and the addition of palæogeographic maps showing the past history of the American continent, based upon the researches of Professor Schuchert of Yale University and others. The student at this point begins with the first stages of life in the Cambrian and pre-



ANTHROPOLOGY.
UNCIVILIZED RACES, OLD WORLD.

THE LIFE HISTORY OF THE EARTH
PALEONTOLOGY.

FOURTH FLOOR.

HISTORY OF THE MUSEUM

Cambrian, estimated at 40,000,000 years ago. He passes into the gallery surrounding the Rotunda and is introduced to the AGE OF FISHES by a collection of living fishes, which, in turn, will lead him into the East Transept devoted to later Palæozoic times, or close of the Age of Fishes. Here the Museum is rich in the Newberry Collection, deposited by Columbia University, and, through the Dodge Fund, is in a position to acquire and arrange most instructive exhibits of the life of this great period of time.

The East Entrance Hall may be partly devoted to exhibits of the larger fishes of modern times and to the Carboniferous and Permian periods, when the AMPHIBIANS AND REPTILES first make their appearance on the earth. This is the Age of the Coal Formations, and mural decorations, illustrating the Carboniferous or Coal Period and its rich flora, will be appropriate. Following this is the Permian in which we have unsurpassed collections. The next hall in the Southeast Wing leads us into Jurassic times and may be known as the FIRST HALL OF DINOSAURS, for which imposing materials have already been assembled, namely, the great *Brontosaurus* and other giant reptiles of this period. Splendid specimens of these animals, as yet unmounted, from the Museum's expeditions and from the Cope Collection presented by Mr. Jesup, await the space which a new hall will afford. In the south end of the same hall one may pass into that long period of time known as the Middle Cretaceous, when the Rocky Mountain region was beneath a series of shallow seas which swarmed with MARINE REPTILES, over which hovered various types of flying reptiles and primitive birds. Again, the collections now in the Museum, those unprepared and those being brought together by our western expeditions, are ready to fill a considerable space. The visitor now passes into the Southwest Pavilion, which will be known as the SECOND HALL OF DINOSAURS, and which will portray the second and final great period of dinosaur life in North America. Here we are now ready to make a most imposing display of *Iguanodons*, giant carnivorous reptiles, or *Tyrannosaurus*, great horned dinosaurs, and the small forms of life from this remarkable period. The flora of this period is

FUTURE SCOPE AND ARRANGEMENT OF EXHIBITIONS

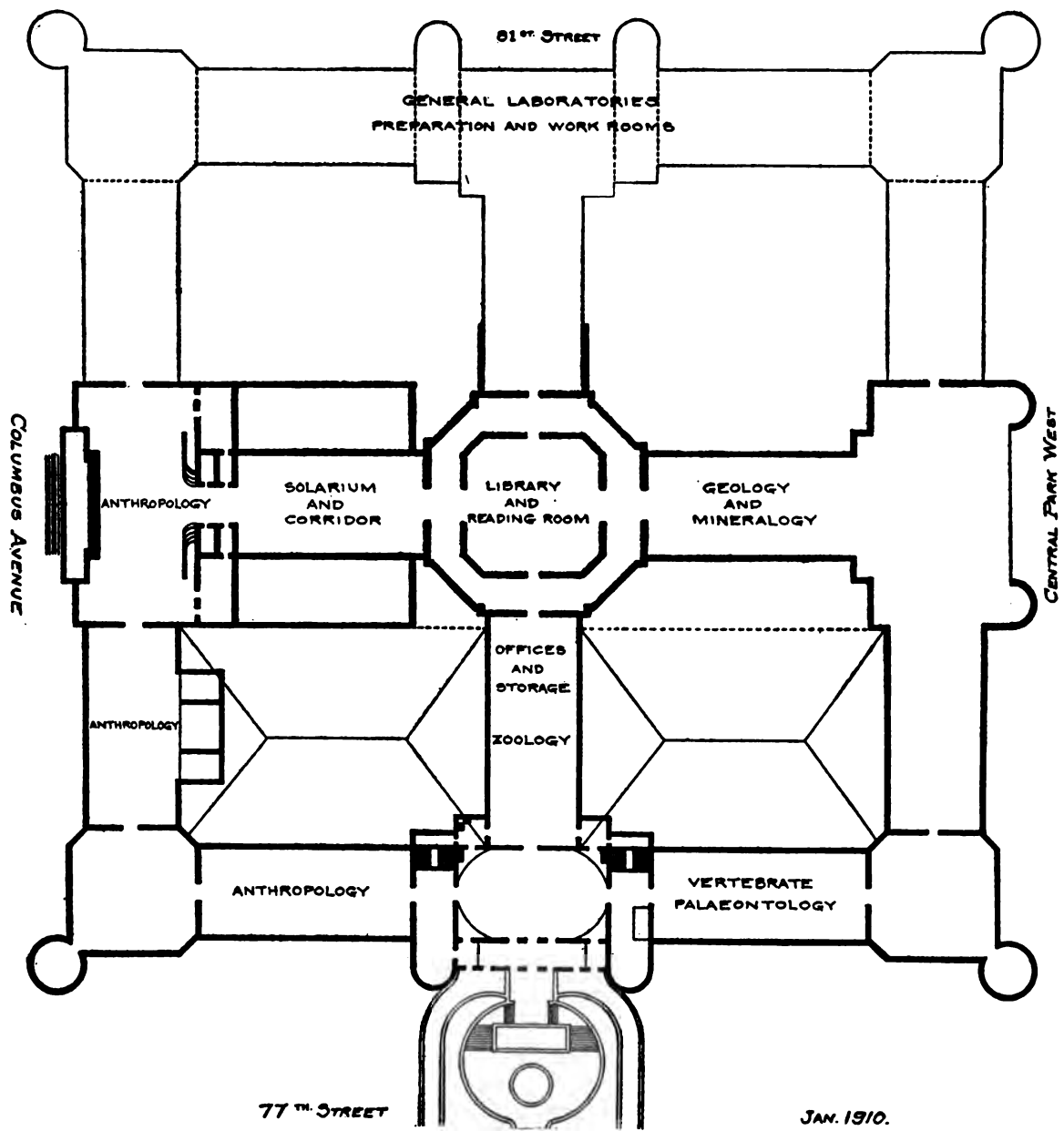
also known and may be splendidly shown both in transparencies and in large mural restorations.

At this time the first small mammals were discovered and gave transition to the Cænozoic life of the South Hall, which will be devoted to the TERTIARY MAMMALS. This hall, which represents the results of twenty years of exploration and purchase, is now overcrowded, and it is proposed to move the Quaternary mammals into the Pavilion Hall beyond, the ample proportions of which lend themselves admirably to the crowning forms of LIFE OF PLEISTOCENE times, the great elephants and mastodons of North America, as well as the ponderous forms of South America, assembled in our Pampean Collection.

This will complete the circuit of the Past History of Life in a manner which will be unrivaled in any museum in the world, and it is peculiarly appropriate to present in mural paintings on the walls here the Pleistocene man as a hunter of these great mammals in Europe and North America and as the artist who depicted forms with rare fidelity on the walls of caves in Europe. This PLEISTOCENE Hall, therefore, like that below it, connects perfectly the zoölogical with the anthropological section to the west, and gives us a perfect sequence.

The Hall of AFRICAN ANTHROPOLOGY, to the west, is rapidly being prepared for the munificent gifts of the late King of the Belgians, through a number of important purchases, through photographs donated to us by several explorers, and through our own expeditions in various parts of Africa. It is one of the halls in which a splendid arrangement and exhibition is already in sight. The visitor then passes into the Southwest Pavilion displaying the anthropology of the PACIFIC ISLANDS, of POLYNESIA, of HAWAII, where our collections are still in the initial stage.

In the adjoining hall of the Southwest Wing, however, we enter the PHILIPPINE ISLANDS, where our collections are really very rich and promise to be nearly complete in the course of a few more years. The next section west of the Entrance Pavilion brings us naturally to CHINA AND JAPAN, from which we have already secured, through the East Asiatic Committee, gifts from Mr. J. H. Schiff, Mr. Edward D.



FIFTH FLOOR. ADMINISTRATION, PREPARATION, STORAGE.

FUTURE SCOPE AND ARRANGEMENT OF EXHIBITIONS

Adams, and others of very rich materials from the earliest stages of culture in these countries, and some ethnological and archæological material of note. From here we pass into the West Transept Hall, which will be devoted to the SIBERIAN TRIBES. It may be said that the collections from these tribes are superb, again through the generosity of the East Asiatic Committee.

FIFTH FLOOR.—The Top, or Fifth Floor, of the Museum will be devoted to administration, to preparation and research rooms of the Scientific Staff, to storage rooms and to the great MUSEUM LIBRARY AND READING ROOM, which it is now proposed to place in the center of the Rotunda. The Library has already attained the rank of one of the first scientific libraries of the country, through the co-operation of the New York Academy of Sciences, as already set forth. It should be made both a working library for all departments of the Museum, and a reference library in most of the branches of science embraced in the future Museum. Certain subjects, however, like astronomy, physics, and physiology will naturally be left to the New York Public Library and to Columbia University, as it is proposed only to develop the educational and exhibitional sides of the subjects rather than the theoretical.

SUMMARY

The above proposed plan of arrangement is an exposition of what may be done rather than a deliberate and thoroughly considered plan of what shall be done, and it is subject to careful discussion by the Trustees, by the members of the Scientific Staff, also to advice which we shall welcome from experts at home and abroad in the various subjects involved. It has the advantage of definitely presenting a plan which can be understood, criticised and doubtless improved through prolonged study and consideration.